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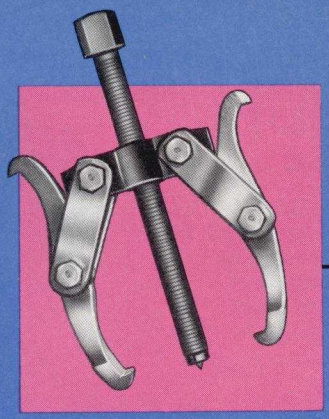
RESEARCH · ENGINEERING · DEVELOPMENT

OTC®

automotive tools & equipment



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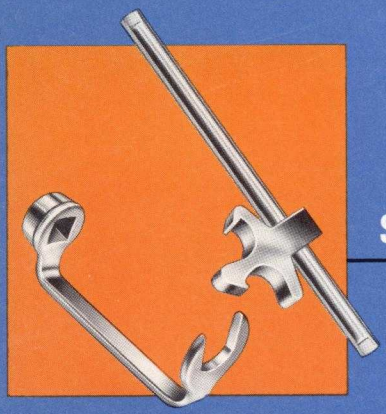

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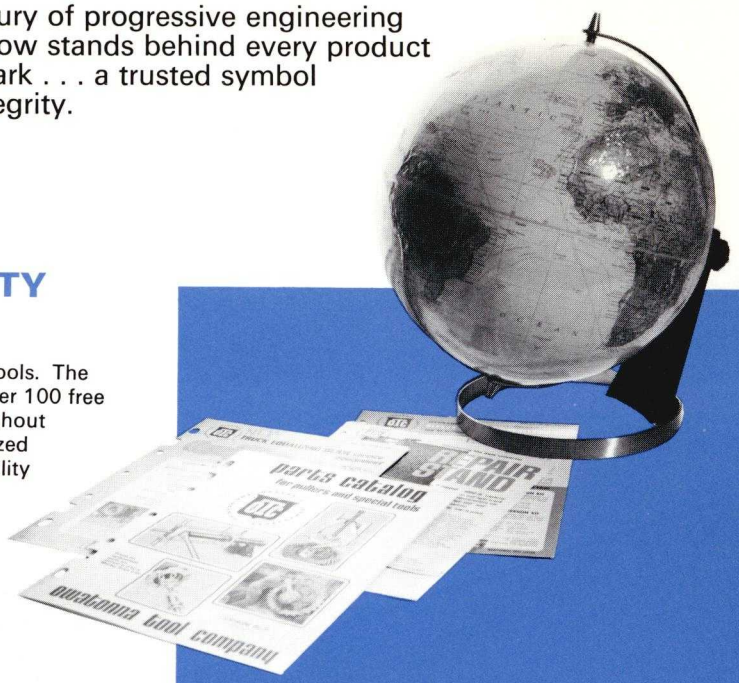
. . . LEADERSHIP *in engineering, design and craftsmanship*

Over half a century of progressive engineering and creative know-how stands behind every product bearing the OTC trademark . . . a trusted symbol of quality and business integrity.

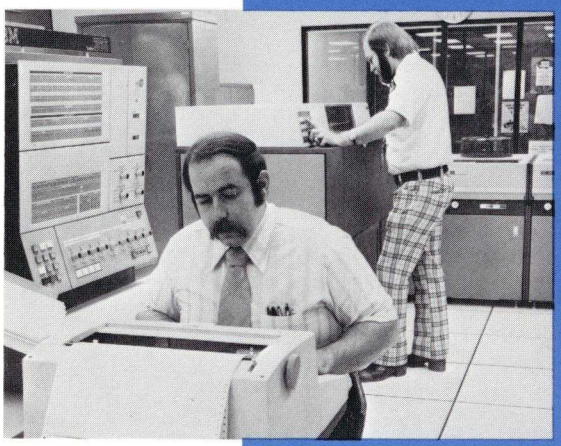


WORLD-WIDE AVAILABILITY AND SERVICE

It can truly be said that the sun never sets on OTC tools. The company's products have found satisfied users in over 100 free world nations—from Afghanistan to Zambia. Throughout the United States and Canada, a network of Authorized Warehouse Distributors assures prompt local availability of products. Coast-to-coast servicing of OTC equipment items is provided by Authorized OTC Repair Stations. Desired technical and marketing assistance is available through OTC's force of highly-trained field sales representatives. A wide variety of informative sales and technical literature is also available from OTC.

ORDER PROCESSING

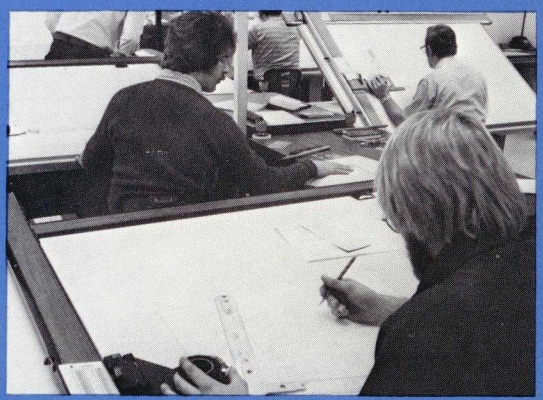
The installation of IBM System 360 data-processing equipment marks OTC's progress in this computer age. An unprecedented degree of speed and accuracy is now possible in production and inventory control, order processing and invoicing. This continuing effort to apply the latest advances to every phase of OTC's operations assures its valued customers of prompt service and delivery.



A partial view of OTC's sophisticated data-processing installation.

CREATIVE ENGINEERING AND PRODUCT DEVELOPMENT

OTC's experienced, dedicated staff of tool and equipment engineers analyzes the needs of today's dynamic automotive industry, and designs tools that solve difficult maintenance and repair problems. OTC is the exclusive supplier of special service tools to two of the world's largest auto makers.



The highly skilled OTC engineering staff analyzes a multitude of industry problems daily.

QUALITY CONTROL

The entire OTC manufacturing cycle, from careful selection of raw materials to painstaking finishing, is conducted under strict quality control. Precision testing instruments are employed by trained technicians to assure that every product bearing the OTC trademark lives up to the company's well-earned reputation.

Digital readouts to 1/10,000 of an inch assure the most accurate checking of tolerances for quality control.

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OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

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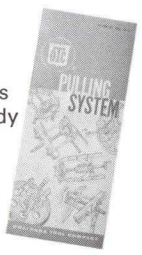
ADDITIONAL INFORMATIVE OTC LITERATURE...

PULLING SYSTEM BOOKLET

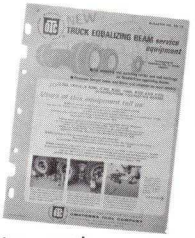


Explains the proper use of the many tools of the famous OTC "Pulling System." Handy hints tell you how to solve the basic pulling problems. Ask for Booklet PS-2.

ENGINE SLEEVE PULLER BULLETIN

Lists OTC's line of mechanical and hydraulic sleeve pullers, and provides complete model application . . . to enable you to select the puller adapter plate needed for a specific engine. Request Bulletin SL-67.

HENDRICKSON SUSPENSION BUSHING SERVICE EQUIPMENT BULLETIN



Bulletin EB-74 gives complete information on OTC's unique equipment for servicing bushings of the popular Hendrickson tandem truck suspensions.

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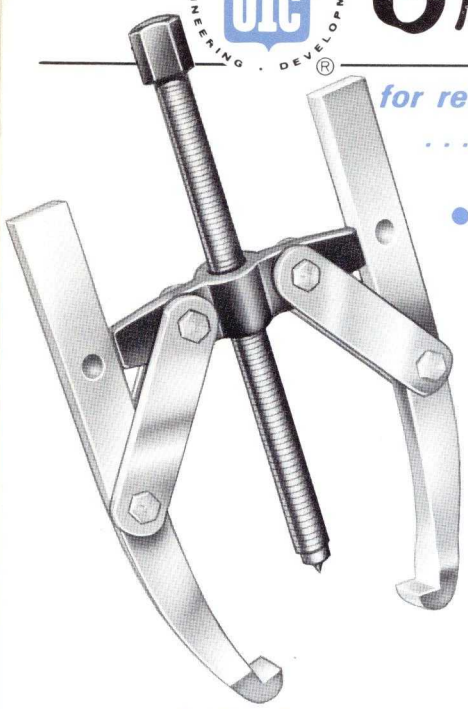
Fed. Spec.: GGG-P-00781-D

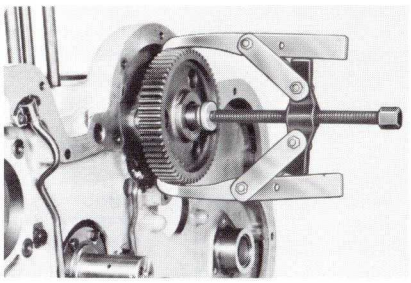
Grip-O-Matic® PULLERS

for removing **GEARS, BEARINGS, PULLEYS, WHEELS, ETC.,**
. . . safely, quickly and easily!



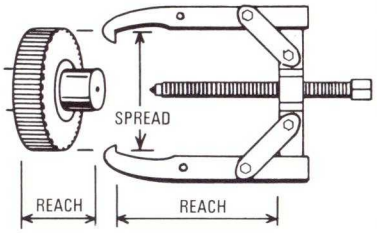
2-JAW PULLER
ILLUSTRATED ABOVE

- **The more pressure applied, the tighter they grip.**
- **2-jaw, 3-jaw and combination models are available for pulling versatility!**
- **Thin jaws and easy adjustment make OTC pullers handy to use!**

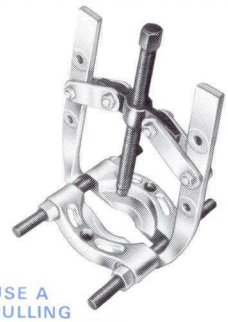


HOW TO SELECT THE PULLER YOU NEED

As shown at right, compare "reach" and "spread" of pulling job with that of the pullers listed. The puller selected must have dimensions equal to or larger than those of the job. If certain clearance problems exist, a 3-jaw puller may be needed. A puller of adequate dimensions will *usually* have enough power. However, if in doubt, select the next largest size!



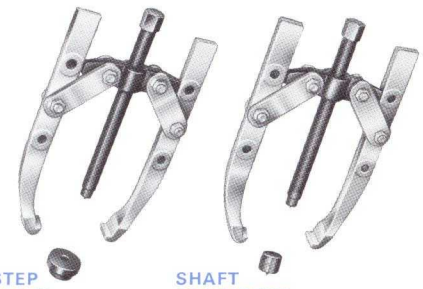
USEFUL ACCESSORIES FOR THESE PULLERS



USE A PULLING ATTACHMENT

Make difficult pulling jobs easier with OTC's pulling attachments. They assure precision pulling of bearings, other hard-to-grip parts.

SEE CATALOG PAGE 11

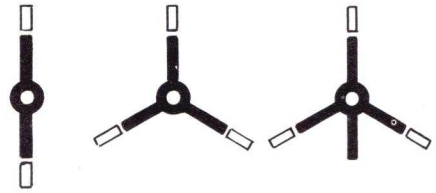


STEP PLATE — SHAFT PROTECTOR

Here are two extremely versatile adapters which will assist in many jobs involving bearings, gears and shafts. Each is designed to solve specific pulling problems.

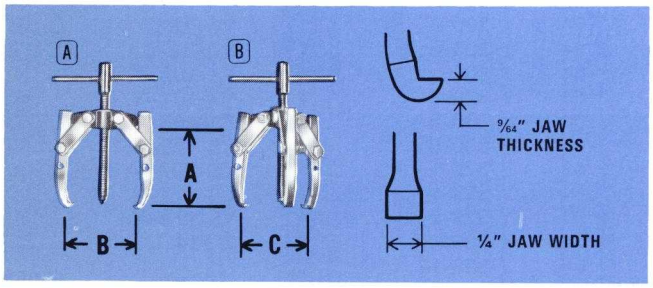
SEE CATALOG PAGE 13

TYPES OF PULLER CROSS HEADS



2-JAW PULLER HEAD	3-JAW PULLER HEAD	2 & 3-JAW COMBINATION PULLER HEAD

CHOOSE YOUR PULLER FROM THIS RANGE OF SIZES



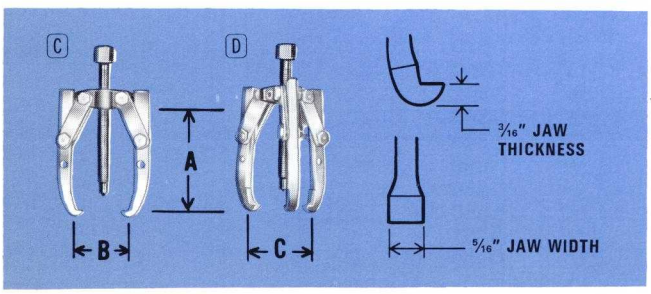
1 TON CAP.—2-JAW & 3-JAW UP TO 2⅛" REACH

2-JAW PULLER

A—REACH: 2⅛" max.
B—SPREAD: 3¼" max.
SCREW SIZE: 5/16"-24 x 3⅞" lg.
A No. 1000—2-jaw puller. Wt. 5 oz.

3-JAW PULLER

A—REACH: 2⅛" max.
C—SPREAD: 3¼" max.
SCREW SIZE: 5/16"-24 x 3⅞" lg.
B No. 1010—3-jaw puller. Wt. 8 oz.



2 TON CAP.—2-JAW & COMBINATION UP TO 3⅜" REACH

2-JAW PULLER

A—REACH: 3⅜" max.
B—SPREAD: 4" max.
SCREW SIZE: ⅜" x 4⅞" lg.
C No. 1000½-L—2-jaw puller. Wt. 14 oz.

2—3-JAW PULLER

A—REACH: 3⅜" max.
C—SPREAD: 4¾" max.
SCREW SIZE: ⅜" x 4⅞" lg.
D No. 1010½-LA—Comb. 2-jaw, 3-jaw puller. Wt. 1¼ lbs.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

5 TON CAP.—2-JAW & COMBINATION REVERSIBLE JAWS—UP TO 3¼" REACH

2-JAW PULLER

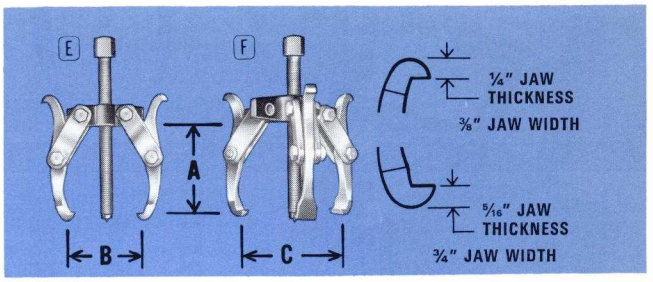
A—REACH: 3¼" max.
B—SPREAD: 6" max.
SCREW SIZE: 9/16" x 6 15/16" lg.
E No. 1001—2-jaw puller.* Wt. 1¾ lbs.

*With double-end, reversible jaws

2–3-JAW PULLER

A—REACH: 3¼" max.
C—SPREAD: 7" max.
SCREW SIZE: 9/16" x 6 15/16" lg.
F No. 1011-A—Comb. 2-jaw, 3-jaw puller.* Wt. 2¾ lbs.

*With double-end, reversible jaws



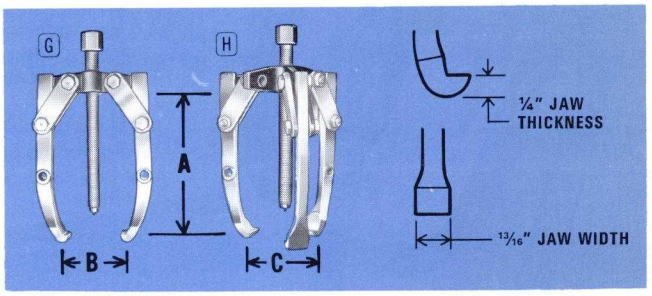
5 TON CAP.—2-JAW & COMBINATION UP TO 5½" REACH

2-JAW PULLER

A—REACH: 5½" max.
B—SPREAD: 6" max.
SCREW SIZE: 9/16" x 6 15/16" lg.
G No. 1001-L—2-jaw puller. Wt. 2 lbs.

2–3-JAW PULLER

A—REACH: 5½" max.
C—SPREAD: 7" max.
SCREW SIZE: 9/16" x 6 15/16" lg.
H No. 1011A-L—Comb. 2-jaw, 3-jaw puller. Wt. 3¼ lbs.



7 TON CAP.—2-JAW & COMBINATION REVERSIBLE JAWS—UP TO 5" REACH

2-JAW PULLER

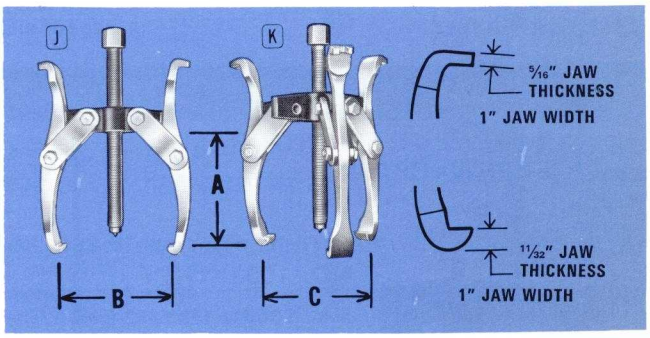
A—REACH: 5" max.
B—SPREAD: 9" max.
SCREW SIZE: 11/16" x 9" lg.
J No. 1002—2-jaw puller.* Wt. 4½ lbs.

*With double-end, reversible jaws

2–3-JAW PULLER

A—REACH: 5" max.
C—SPREAD: 10½" max.
SCREW SIZE: 11/16" x 9" lg.
K No. 1012-A—Comb. 2-jaw, 3-jaw puller.* Wt. 6¼ lbs.

*With double-end, reversible jaws



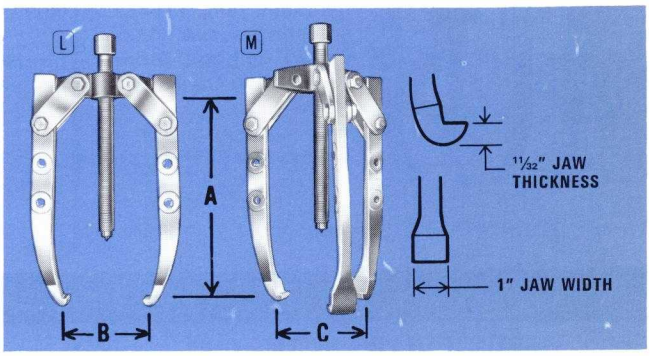
7 TON CAP.—2-JAW & COMBINATION UP TO 8¾" REACH

2-JAW PULLER

A—REACH: 8¾" max.
B—SPREAD: 9½" max.
SCREW SIZE: 11/16" x 9" lg.
L No. 1002-L—2-jaw puller. Wt. 5 lbs.

2–3-JAW PULLER

A—REACH: 8¾" max.
C—SPREAD: 11" max.
SCREW SIZE: 11/16" x 9" lg.
M No. 1012A-L—Comb. 2-jaw, 3-jaw puller. Wt. 7¼ lbs.



13 TON CAP.—2-JAW & COMBINATION 11" REACH & 15¼" REACH (LONG JAWS)

2-JAW PULLER STANDARD JAWS

A—REACH: 11" max.
B—SPREAD: 12½" max.
SCREW SIZE: 13/16" x 12" lg.
N No. 1003—2-jaw puller. Wt. 10½ lbs.

2-JAW PULLER LONG JAWS

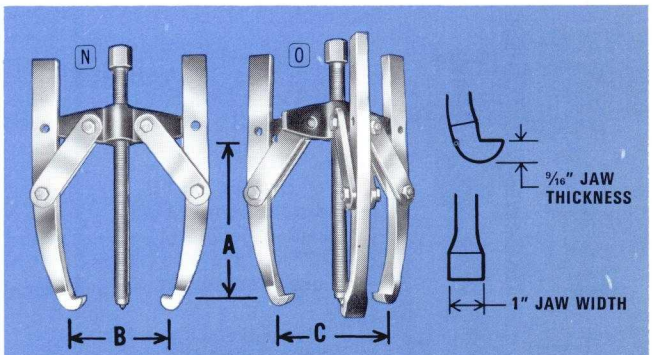
A—REACH: 15¼" max.
B—SPREAD: 15½" max.
SCREW SIZE: 13/16" x 12" lg.
N No. 1003-L—2-jaw puller. Wt. 13 lbs.

2–3-JAW PULLER STANDARD JAWS

A—REACH: 11" max.
C—SPREAD: 14" max.
SCREW SIZE: 13/16" x 12" lg.
O No. 1013-A—Comb. 2-jaw, 3-jaw puller. Wt. 14¾ lbs.

2–3-JAW PULLER LONG JAWS

A—REACH: 15¼" max.
C—SPREAD: 17" max.
SCREW SIZE: 13/16" x 12" lg.
O No. 1013A-L—Comb. 2-jaw, 3-jaw puller. Wt. 18¼ lbs.



AVAILABLE WITH STANDARD OR LONG JAWS (STANDARD JAWS SHOWN)

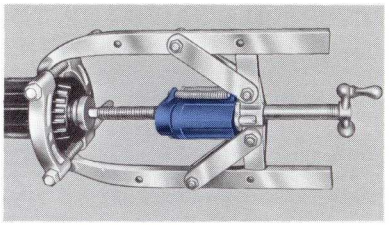
HYDRAULIC *Grip-O-Matic*® PULLERS

Fed. Spec.: GGG-P-00781-D

No. 1003½-HLY 2-JAW PULLER ILLUSTRATED

● **Remove gears, bearings, pulleys, wheels, etc. . . . with OTC hydraulic pullers!**

Even the most stubborn pulling jobs become possible with OTC hydraulic power! Available in both 2-jaw and 3-jaw models, these "Grip-O-Matic" pullers are equipped with OTC's famous "Power-Twin" center-hole ram which can be removed and used in other applications.



HOW TO ORDER PULLER, LESS HYDRAULICS . . .

If you already have OTC's "Power-Twin" center-hole ram, you may wish to order any of the pullers below *less* the hydraulic ram, screw and crank. Simply order the puller you need having the letters "LY" after the OTC model number.

PULLER WITH HYDRAULICS . . .

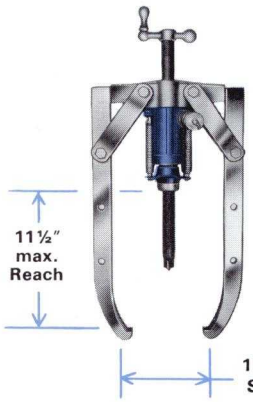
To order the puller of your choice *with* hydraulics (puller with ram, screw and crank), simply order the puller you need having the letters "HLY" after the OTC model number.

TO GET HYDRAULIC PUMP AND HOSE . . .

Turn to pages 62 thru 63 for information on the several power units available. Hoses are described on page 64 along with other hydraulic accessories.

17½-TON Capacity 2-JAW PULLER

2-JAW PULLER WITH RAM, SCREW, CRANK



2-JAW PULLER NO. 1003½-HLY

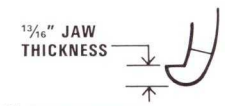
No. 1003½-HLY—2-jaw puller, Y15-A hydraulic ram, Y15-12 adjusting screw (1"—8 x 20" lg.) and Y15—13 adjusting crank. Wt., 40 lbs.

(Pump not included. See pages 62-63.)

2-JAW PULLER LESS RAM, SCREW, CRANK

2-JAW PULLER NO. 1003½-LY

No. 1003½-LY—Puller **only** . . . (ram, screw and crank **not** included). Wt., 24 lbs.



SCREW & CRANK

CRANK

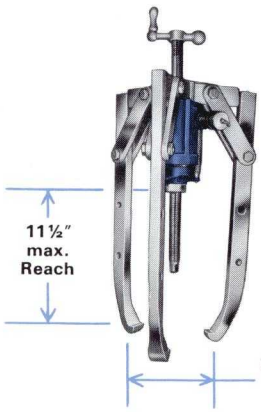
No. Y15-13 Hand adjusting crank.

SCREW

No. Y15-12 adjusting screw, 1"—8 x 20" lg.

17½-TON Capacity 3-JAW PULLER

3-JAW PULLER WITH RAM, SCREW, CRANK



3-JAW PULLER NO. 1013½-HLY

No. 1013½-HLY—3-jaw puller, Y15-A hydraulic ram, Y15-12 adjusting screw (1"—8 x 20" lg.) and Y15—13 adjusting crank. Wt., 53 lbs.

(Pump not included. See pages 62-63.)

3-JAW PULLER LESS RAM, SCREW, CRANK

3-JAW PULLER NO. 1013½-LY

No. 1013½-LY—Puller **only** . . . (ram, screw and crank **not** included). Wt., 37 lbs.

SCREW & CRANK

CRANK

No. Y15-13 Hand adjusting crank.

SCREW

No. Y15-12 adjusting screw, 1"—8 x 20" lg.

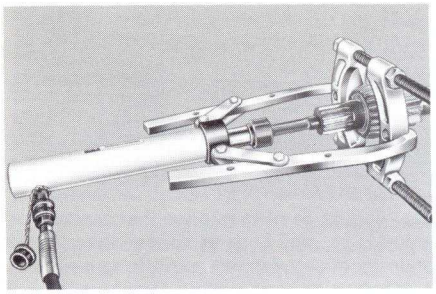
SEE PAGES 62 thru 64 FOR HYDRAULIC ACCESSORIES!

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

HYDRAULIC Grip-O-Matic® PULLERS

- Plenty of power for pulling gears, bearings, pulleys and other friction-fitted parts.
- Compact in size, easy to use.
- Ram piston has 10" stroke.



Pulling tapered roller bearing from a truck transmission shaft.

We've combined the proven "Grip-O-Matic" puller design with a single-acting, spring-return ram having a full 10" stroke. The result is a pulling tool with adequate power to handle part removal jobs encountered in servicing of heavy trucks, farm and construction vehicles.

HOW TO ORDER PULLER, LESS RAM . . .

If you already have a YS-107-A, you may wish to order either of the pullers below less the ram. Simply order the puller you need having the letters "LY" after the OTC model number.

PULLER WITH RAM . . .

To order puller with ram, order puller having "HLY" suffix.

TO GET PUMP AND HOSE . . .

Turn to pages 62 thru 63 for information on the several power units available. Hoses are described on page 64 along with other accessories.

2-JAW PULLER

10 TON Capacity 2-JAW PULLER

2-JAW PULLER LESS HYD. RAM

No. 1003-LY—2-jaw puller and pushing adapter **only**; ram **not** included. Weight, 12¼ lbs. (May be used with any single-acting hydraulic ram having 2¼"-14 straight collar thread and 1¼"-11½ NPT piston thread.)

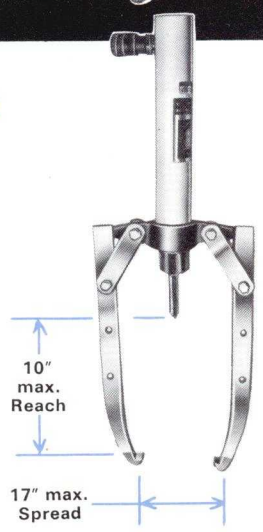
PUSHER ADAPTER NO. 34602

Adapter, included, enables you to use this ram on a variety of jobs.

2-JAW PULLER WITH HYDRAULIC RAM

No. 1003-HLY
2-jaw puller. Includes hydraulic ram with half coupler and pushing adapter.
Weight, 26 lbs.

Pump is not included in this set.



10 TON Capacity 2-3-JAW PULLER

2-3-JAW PULLER LESS HYD. RAM

No. 1013A-LY—2-3 jaw puller and pushing adapter **only**; ram **not** included. Weight, 17¾ lbs. (May be used with any single-acting hydraulic ram having 2¼"-14 straight collar thread and 1¼"-11½ NPT piston thread.)

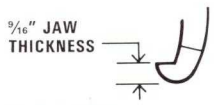
PUSHER ADAPTER NO. 34602

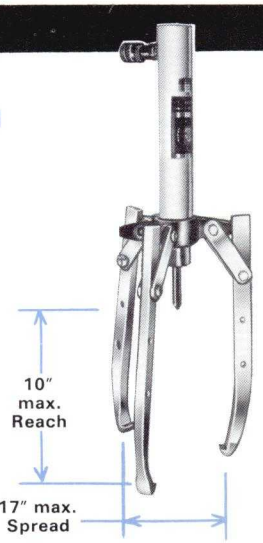
Adapter, included, enables you to use this ram on a variety of jobs.

2-3-JAW PULLER WITH HYDRAULIC RAM

No. 1013A-HLY
2-3-jaw puller. Includes hydraulic ram with half coupler and pushing adapter.
Weight, 31½ lbs.

Pump is not included in this set.





SEE PAGES 62 thru 64 FOR HYDRAULIC ACCESSORIES!

VERSATILE PUSH-PULLERS®

Fed. Spec.: GGG-P-00781-D

handle most any pulling-installing job imaginable!

- **Apply pushing or pulling force to remove and install parts easily!**
- **Optional legs provide added reach!**
- **Use with OTC attachments and adapters for pulling versatility!**

The extremely versatile "Push-puller" can be used to apply either pushing or pulling force, depending upon how it is set up. Legs of various lengths are available for each puller to obtain most any desired, extra-long reach. A wide variety of threaded adapters, bearing pulling attachments and internal pulling attachments may be used with your OTC "Push-puller" to handle just about any pulling-installing job imaginable.

INCREASE THE VERSATILITY OF PULLERS WITH OTC ATTACHMENTS

The things you can do with an OTC "Push-puller" are almost limitless, especially when you have the wide range of special adapters right at your fingertips. OTC offers a host of adapters—step plate adapters, shaft protectors, male-female and female threaded adapters, internal pulling attachments and bearing pulling attachments—all designed to make your job a lot easier.

The knife-like edges of OTC bearing pulling attachments fit behind hard to grip parts for pulling! See page 11.

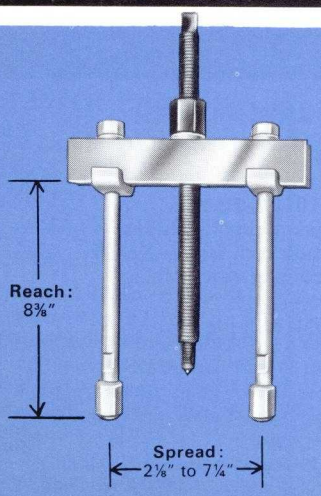
Internal pulling attachments will remove bearing cups, oil seals and bushings from blind holes. Turn to page 12.

A selection of puller adapters of various sizes is available to enable your puller to handle a variety of jobs. You'll find all the information on page 13.

10 TON Capacity

No. 927

Equipped with 927-A puller legs.
Wt., 7 lbs.



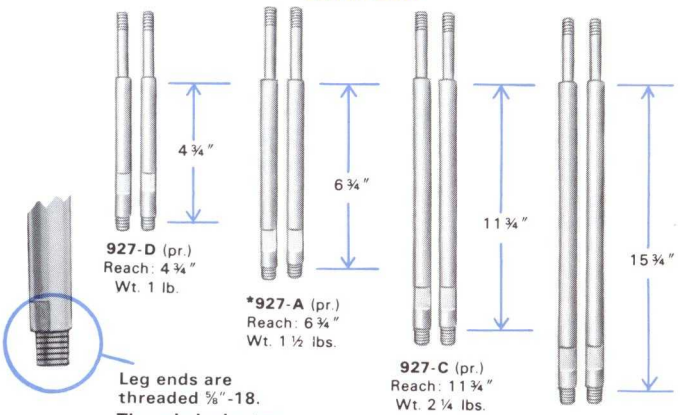
Use with bearing pulling attachment No. 951.

Use with pulley pulling attachment No. 679.

Use with internal pulling attachments No. 943, 943-A, 943-B and 943-C.

Screw size:
***** ¾" — 16 x 12" lg.
***** ½" of forcing screw tip-end is threaded ⅝" — 18.

EXTRA LEGS



927-D (pr.)
Reach: 4¾"
Wt. 1 lb.

***927-A** (pr.)
Reach: 6¾"
Wt. 1½ lbs.

927-C (pr.)
Reach: 11¾"
Wt. 2¼ lbs.

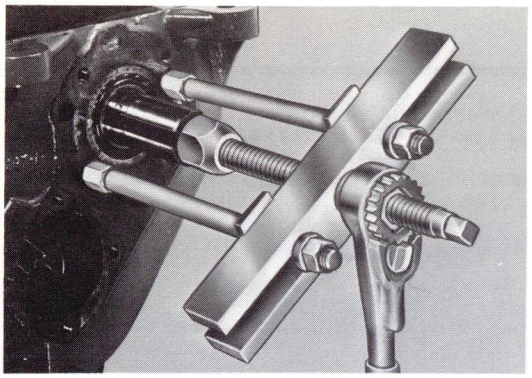
927-B (pr.)
Reach: 15¾"
Wt. 3¼ lbs.

Leg ends are threaded ⅝"-18.
Threaded adapters are listed on catalog page 13.

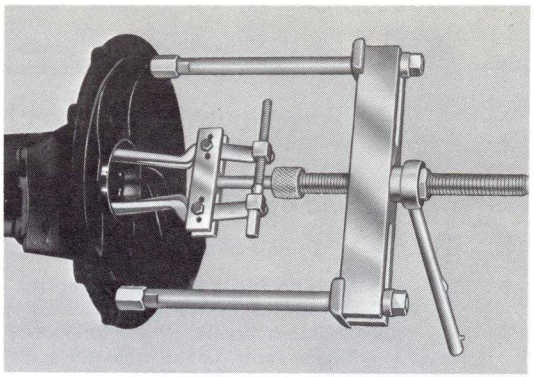
*Standard legs supplied with 927 puller.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

FOR PARTS INFORMATION, SEE OTC PARTS CATALOG



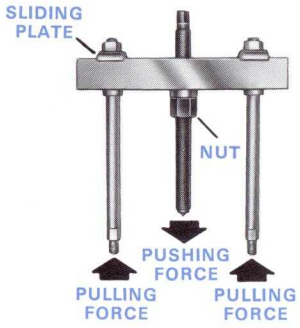
Pulling transmission output shaft. Forcing screw is attached to shaft with threaded adapter. P-61 ratchet is used to turn forcing nut.



Bearing inner race being removed from housing by "Push-puller" in combination with an internal pulling attachment.

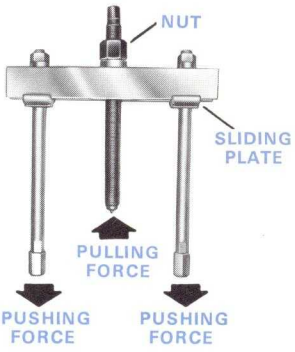
SEE NEXT PAGE FOR HYDRAULIC "PUSH-PULLERS"

HOW TO DETERMINE PLACEMENT OF FORCING NUT & SLIDING PLATES



PULLING OR PUSHING, THE FORCING NUT AND SLIDING PLATES ARE THE KEY...

First, you must determine whether you are going to have the forcing screw pushing or pulling. For a job in which the screw must **push** (as in removing a gear from a shaft), the forcing nut is installed **beneath** the cross block, as shown at left. To cause the screw to **pull** (as in removing a shaft from a housing), the forcing nut is installed on **top** of the cross block, as shown at right. Finally, always place the sliding plates on the **opposite side** of the cross block from the forcing nut.



THE RATED-CAPACITY OF "PUSH-PULLERS"

Each OTC "Push-puller" has been rated at a specified tonnage capacity. This "rated-capacity" was determined using the standard leg length for each "Push-puller," whether manual or hydraulic. Using longer legs will reduce the rated capacity.

RATCHET FOR USE ON 938 "PUSH-PULLER"

No. P-61

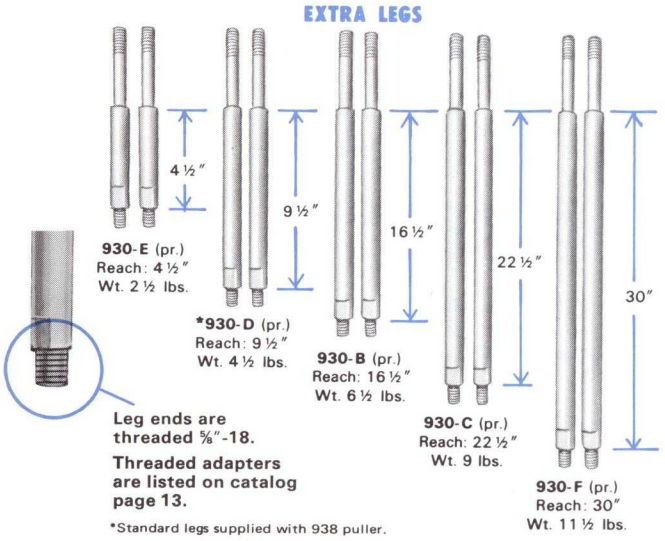
No. M-28

Reversible ratchet and tubular handle are ideal for turning the 1½" hex forcing nut of the No. 938 "Push-puller." Wrench is also usable on hundreds of other maintenance jobs.

No. P-61—Reversible ratchet.

No. M-28—Tubular handle, 24" long.

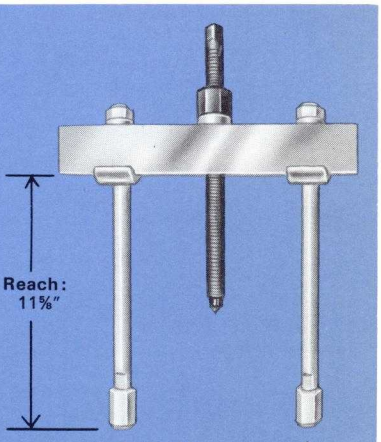
17½ TON Capacity



*Standard legs supplied with 938 puller.

No. 938

Equipped with 930-D puller legs.
Wt., 20¾ lbs.



Use with bearing pulling attachments No. 952 and 952-A.

Use with pulley pulling attachment No. 680.

Use with internal pulling attachments No. 943, 943-A, 943-B and 943-C.

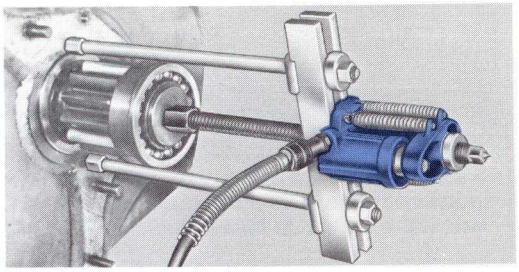
HYDRAULIC PUSH-PULLERS®

Fed. Spec.: GGG-P-00781-D

- **Remove and install tight-fitting parts such as gears, bearings, pulleys, wheels, etc. . . . quickly and easily!**
- **Ram is detachable for use with other OTC pullers, shop presses and other equipment!**

Combine the amazing versatility of OTC's famous "Push-puller" with the dependable hydraulic power offered by a "Power-Twin" center-hole ram . . . the result is a pulling tool that makes the "impossible" jobs routine! Remove and install gears, bearings, pulleys, shafts and other press-fitted parts without costly damage. Can be used to apply either a pushing or pulling force depending on how you set it up. Legs of various lengths are available for each "Push-puller," to provide extra reach.

NO. 938-HYD ILLUSTRATED



Removing crawler tractor sprocket drive pinion shaft. Puller screw is attached to shaft by threaded adapter.

17½-TON CAPACITY

USE WITH ACCESSORIES SHOWN ON PAGES 11, 12 & 13

PULLER LESS HYDRAULICS Order puller *only* if you already have OTC's "Power-Twin" center-hole ram (No. Y15-A).

TO OBTAIN PUMP, HOSE, COUPLER, SCREW & CRANK

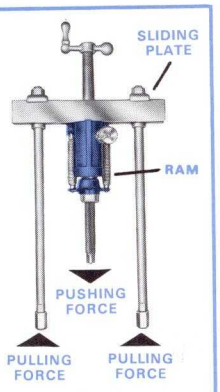
See page 64 for a complete list of accessories to make your hydraulically powered "Push-puller" even more versatile. For ram and pump combinations, see page 61 for further information.

"RATED CAPACITY" Each OTC "Push-puller's" "rated-capacity" was determined using the standard leg length for each "Push-puller," whether manual or hydraulic. Use of longer legs will reduce the rated capacity.

HOW TO DETERMINE RAM PLACEMENT

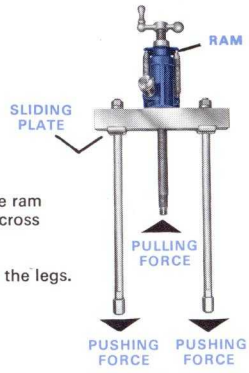
PUSHING WITH SCREW

For a job in which the screw must push (as in removing a gear from a shaft), the ram is installed beneath the cross block. This creates a pushing force by the ram while the legs exert a pulling force.



PULLING WITH SCREW

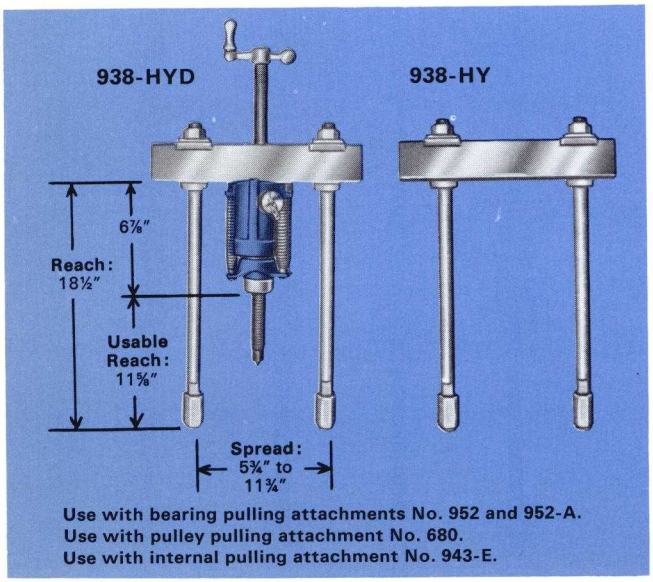
To cause the screw to pull (as in removing a shaft from a housing), the ram is installed on top of the cross block, to apply a pulling force with the ram and a pushing force with the legs.



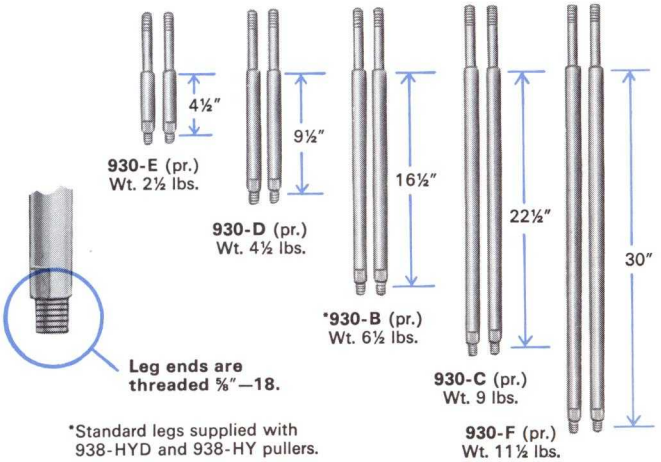
ORDERING INFORMATION

No. 938-HYD—Includes: "Push-puller" with 930-B legs, Y15-A hydraulic ram, Y15-12 adjusting screw (1"—8 x 20" lg.) and Y15-13 adjusting crank. Wt. 38 lbs.

No. 938-HY—Puller only . . . (ram, screw and crank not included). Wt. 22 lbs.



Use with bearing pulling attachments No. 952 and 952-A.
Use with pulley pulling attachment No. 680.
Use with internal pulling attachment No. 943-E.



*Standard legs supplied with 938-HYD and 938-HY pullers.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

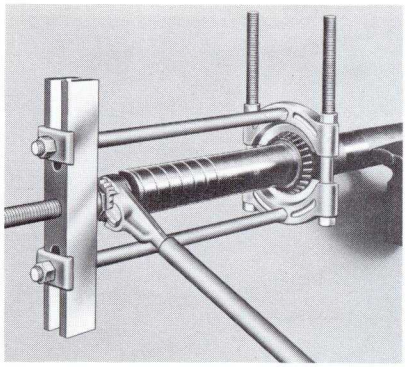
BEARING PULLING ATTACHMENTS

Fed. Spec.: GGG-P-00781-D

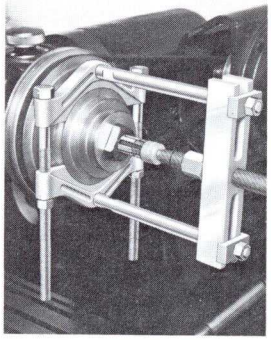
USE WITH GRIP-O-MATIC & PUSH-PULLERS

- **"Knife-like" edges of OTC pulling attachments assure precision pulling of bearings, other hard-to-grip parts!**
- **Ideal accessories for hydraulic shop forcing presses!**

Solve pulling problems where space does not permit hooking puller jaws directly onto part to be pulled . . . "knife-like edges" of attachment may be positioned behind part. When used with "Grip-O-Matic" puller, puller jaws grip attachment's outer edge; when used with a "Push-puller", puller legs are threaded into the attachment's two threaded holes.

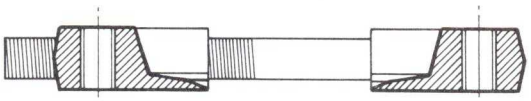


Shown with mechanical "Push-puller," removing bearing from a shaft.

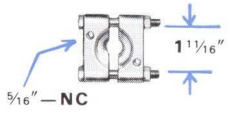


Use Nos. 679 and 680 to pull single or multiple-drive V-belt pulleys without damage or distortion. Attachment clamps down into V-groove to distribute pulling load.

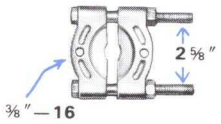
Key features are "knife-like" edges and flat back surface.



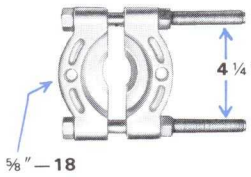
HOW TO ORDER: Two factors determine which pulling attachment to select: 1) the opening size of the attachment; 2) the model(s) of OTC puller which you intend to use with the pulling attachment.



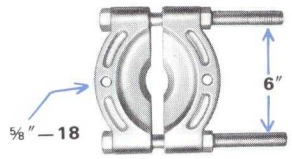
No. 949½
Max. spread: ⅞"
Min. spread: ¼"
Use with OTC puller Nos. 1000, 1000½-L, 1010½-LA.
Wt., ¾ lbs.



No. 950
Max. spread: 2"
Min. spread: ⅛"
Use with OTC puller Nos. 1001, 1001-L, 1011-A, 1011A-L, 515, 515-A.
Wt., 1¼ lbs.



No. 951
Max. spread: 4⅝"
Min. spread: ⅜"
Use with OTC puller Nos. 1002, 1002-L, 1003-HLY, 1012-A, 1012A-L, 1013A-HLY, 927, 522.
Wt., 5 lbs.

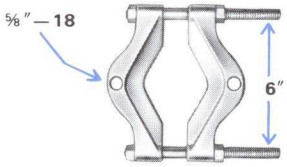


No. 952
Max. spread: 5¼"
Min. spread: ½"
Use with OTC puller Nos. 1003, 1003-L, 1003½-HLY, 1013-A, 1013A-L, 938, 938-HYD.
Wt., 12 lbs.

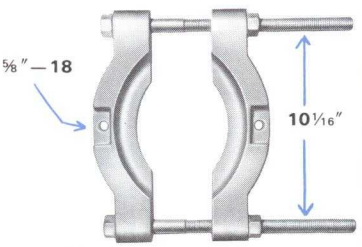
No. 952-A
Same as No. 952, except has spread of ½" to 8⅝". **Wt., 12 lbs.**

V-BELT PULLEY PULLING ATTACHMENTS

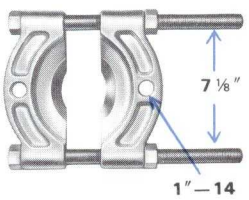
Pull single or multiple-drive V-belt pulleys without damage or distortion. Attachment clamps down into V-groove to distribute pulling load. Used with "Grip-O-Matic" or "Push-pullers."



No. 679
Max. spread: 5⅞"
Min. spread: 1¾"
Use with OTC puller Nos. 1002, 1002-L, 1003-HLY, 1012-A, 1012A-L, 1013A-HLY, 927.
Wt., 4¼ lbs.



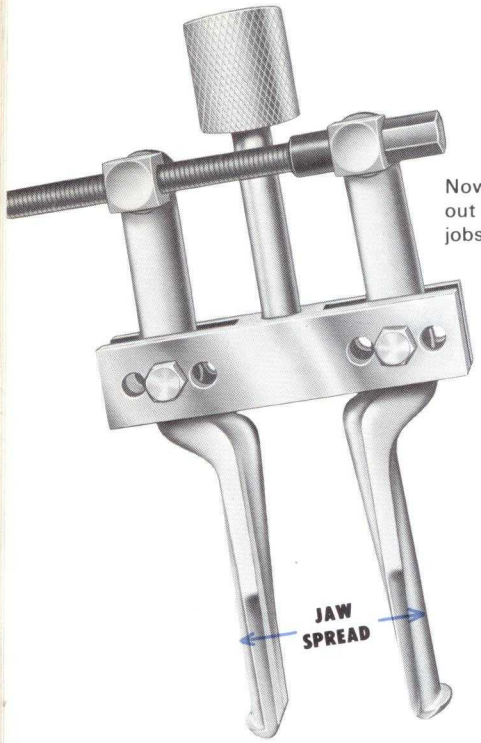
No. 680
Max. spread: 10"
Min. spread: 1⅝"
Use with OTC puller Nos. 1003, 1003-L, 1003½-HLY, 1013-A, 1013A-L, 938, 938-HYD. **Wt., 22¼ lbs.**



No. 952-D
Max. spread: 8"
Min. spread: ⅝"
Used as a bed accessory for hydraulic forcing presses.
Wt., 19¾ lbs.

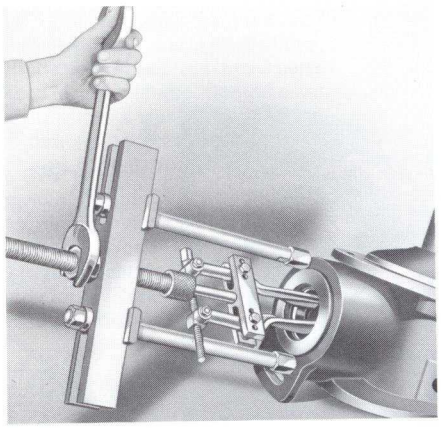
INTERNAL PULLING ATTACHMENTS

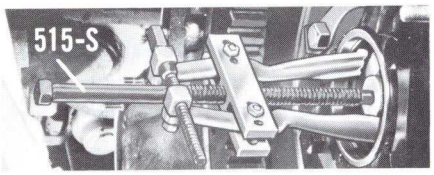
Fed. Spec.: GGG-P-00781-D



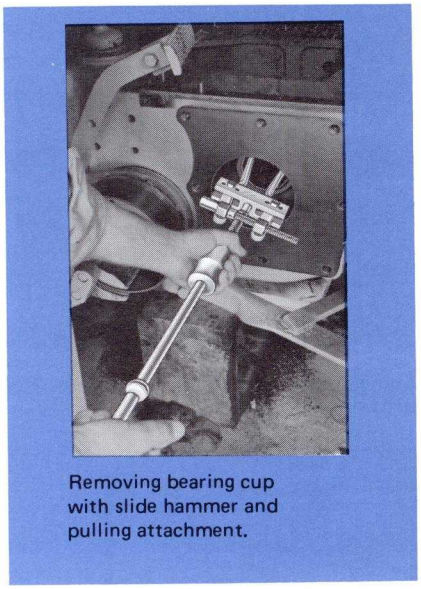
- For fast, easy removal of bearing caps, oil seals and bushings from blind holes!
- May be used with OTC "Push-pullers" or slide hammers!

Now . . . remove bearing cups, oil seals, bushings and other parts from blind holes quickly, without damage to costly parts! OTC internal pulling attachments accomplish these difficult removal jobs the fast, *professional* way . . . approved by leading bearing manufacturers. These versatile attachments will quickly pay for themselves through savings in time, labor. Attachments are adaptable, through adjusting screw and choice of three jaw positions, to fit various diameters. Each attachment is designed for use with a corresponding size of OTC "Push-puller" or slide hammer assembly.

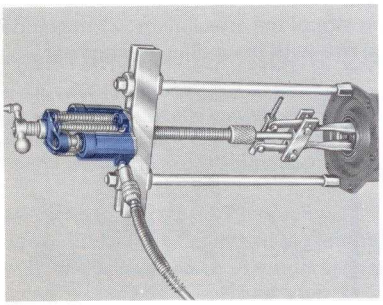




NO. 515-S PULLER SCREW – Acts as regular forcing screw when threaded directly into block of pulling attachment.



Removing bearing cup with slide hammer and pulling attachment.

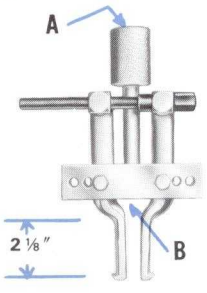


Internal pulling attachment in use with hydraulic "Push-puller."

ORDERING INFORMATION

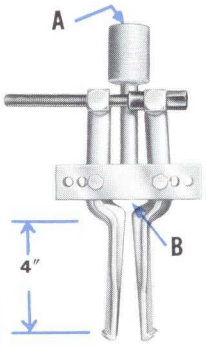
Select the internal pulling attachment having the "reach" and "spread" you require. Also, determine which attachment is used with each OTC "Push-puller" or slide hammer assembly.

USE THESE ATTACHMENTS WITH 927 & 938 "PUSH-PULLERS", 943-R & 943-S SLIDE HAMMER PULLERS OR 515-S SCREW



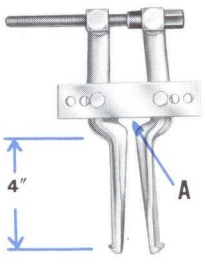
No. 943-C

Jaw spread: 1 ½" to 5"
"A" . . . 1" — 14 thd.
"B" . . . ⅝" — 18 thd.
Wt. 4¼ lbs.



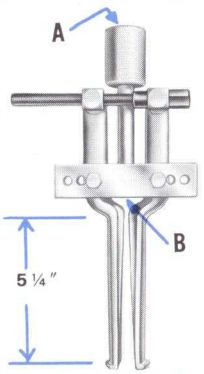
No. 943

Jaw spread: 1 ½" to 6"
"A" . . . 1" — 14 thd.
"B" . . . ⅝" — 18 thd.
Wt. 4½ lbs.



No. 943-B

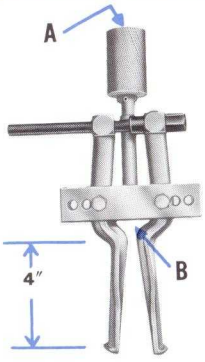
Jaw spread: 1 ½" to 6"
"A" . . . ⅝" — 18 thd.
Wt. 3½ lbs.



No. 943-A

Jaw spread: 1 ½" to 7"
"A" . . . 1" — 14 thd.
"B" . . . ⅝" — 18 thd.
Wt. 4½ lbs.

USE THIS ATTACHMENT WITH 938-HYD "PUSH-PULLER"



No. 943-E

Jaw spread: 1 ½" to 6"
"A" . . . 1" — 8 thd.
"B" . . . ⅝" — 18 thd.
Wt. 4½ lbs.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

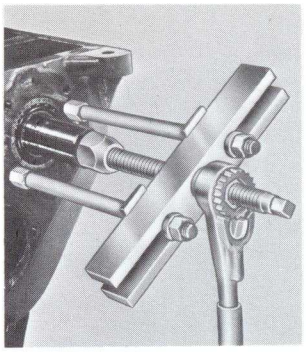
FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

PULLER ADAPTERS

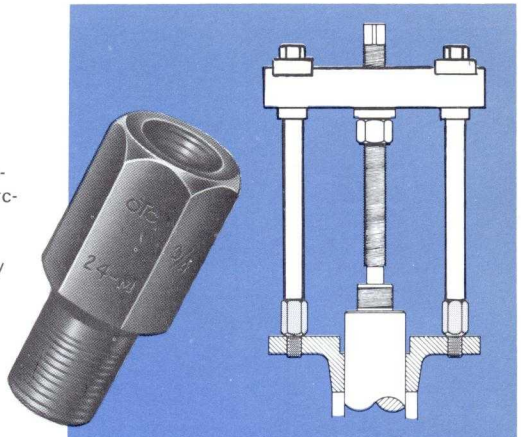
Fed. Spec.: GGG-P-00781-D

MALE-FEMALE THREADED ADAPTERS

FEMALE END	MALE END	LGTH.	OTC NO.
	¼"-20		9-M
	5/16"-18		11-M
	7/16"-14		12-M
	7/16"-20		13-M
	3/8"-24		14-M
	3/8"-16		15-M
	½"-20		16-M
	½"-13		17-M
	9/16"-18		18-M
	9/16"-12		19-M
5/8"-18	5/8"-11	2¼"	20-M
	¾"-16		24-M
	¾"-10		25-M
	7/8"-14		28-M
	7/8"-9		29-M
	1"-14		32-M
	1/8" pipe		37-M
	¼" pipe		39-M



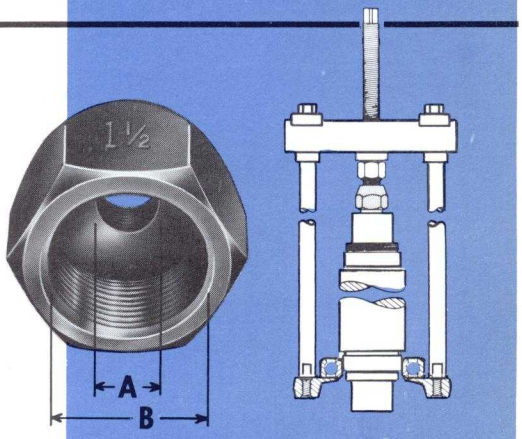
Used on ends of "Push-puller" legs or with forcing screws, to assist in pulling shafts, bearing caps, pinions and many other parts.



FEMALE THREADED ADAPTERS

FEMALE END-"A"	FEMALE END-"B"	OTC NO.	
½"-20	5/8"-18	916	
5/8"-18	5/8"-18	920	Set No. 919
	¾"-16	924	
	7/8"-14	928	
	1"-14	932	
	1 1/8"-12	936	
	1 ¼"-12	940	
	1 ½"-12	948	

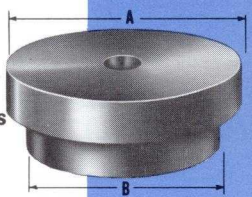
The adapters are used on the ends of OTC "Push-puller" forcing screws or legs in the removal and installation of shafts, axles and housings.

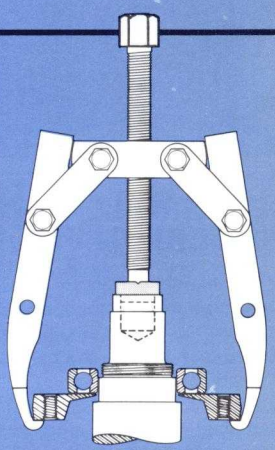


STEP PLATE ADAPTERS

OTC step plate adapters are necessary for pulling and installing bearings, gears or other parts on hollow shafts or housings. Puller screw forces against step plate adapter, as shown at far right. May be used with both OTC "Grip-O-Matic" pullers and "Push-pullers", also with OTC shop presses. Three sets of step plates are available, also.

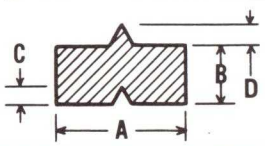
DIAMETER "A" (in.)	DIAMETER "B" (in.)	OTC NO.	
1	¾	630-1	SET NO. 630-S
1 1/8	7/8	630-2	
1 ¼	1	630-3	
1 3/8	1 1/8	630-4	
1 5/8	1 ¼	630-5	SET NO. 630-R
1 ¾	1 3/8	630-6	
1 7/8	1 ½	630-7	
2	1 5/8	630-8	
2 1/8	1 ¾	630-9	
2 3/8	1 7/8	630-10	
2 ½	2	630-11	
2 5/8	2 1/8	630-12	SET NO. 630-T
2 ¾	2 ¼	630-13	
2 7/8	2 3/8	630-14	
3	2 ½	630-15	
3 ¼	2 ¾	630-16	
3 ½	3	630-17	



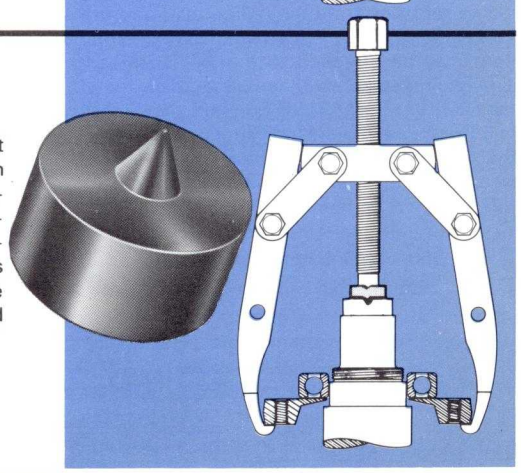


SHAFT PROTECTORS

"A"	"B"	"C" (60°)	"D" (60°)	OTC No.	
1 ½"	¾"	3/8"	7/16"	625-1	SET NO. 625-A
1 ¼"	¾"	3/8"	3/8"	625-2	
1"	¾"	3/8"	5/16"	625-3	
¾"	¾"	¼"	¼"	625-4	
5/8"	5/8"	¼"	¼"	625-5	
5/8"	5/8"	3/16"	3/16"	625-6	



Designed to protect shaft centers from distortion when extreme pressures are applied with OTC "Grip-O-Matic" pullers or "Push-pullers." Shaft protectors are inserted between the end of the puller screw and the shaft.



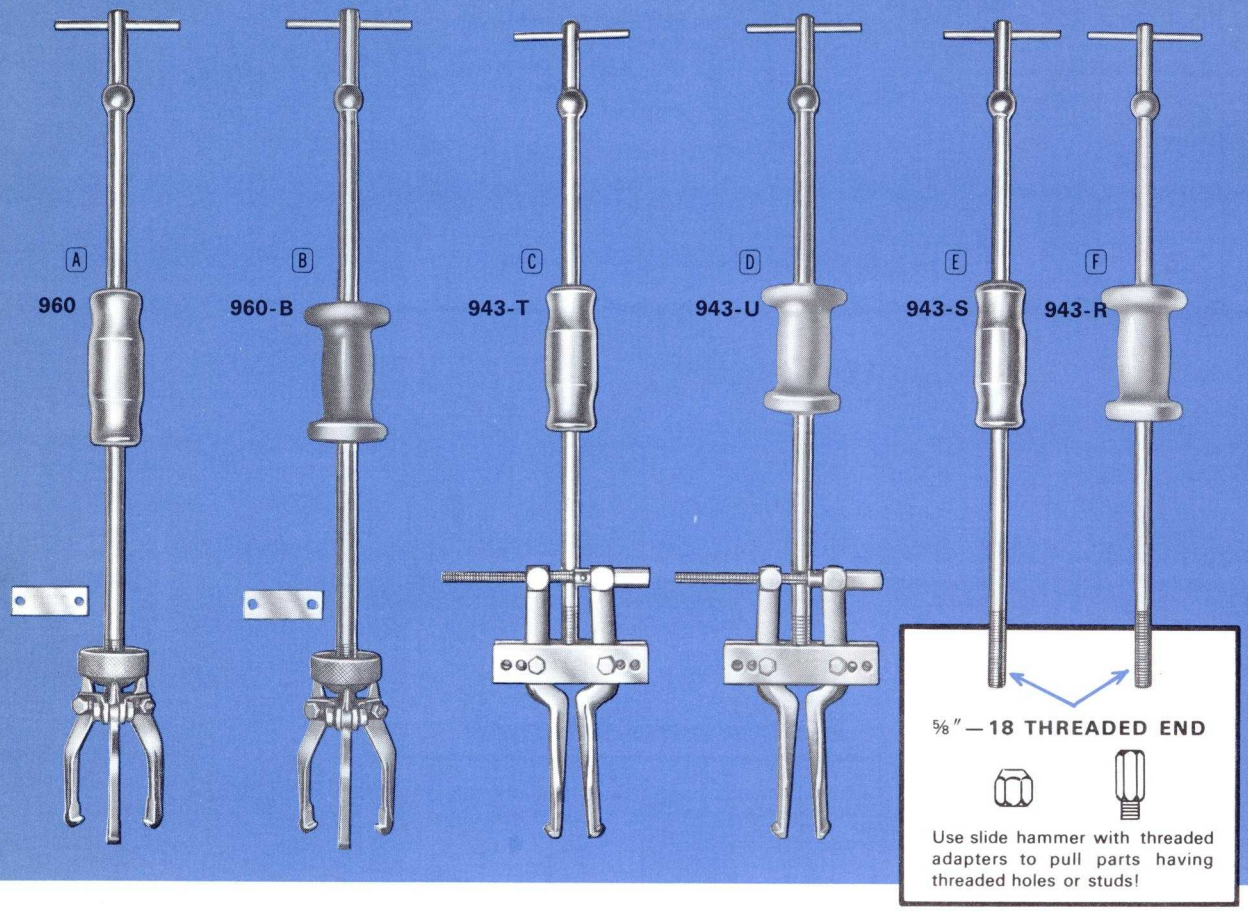
Set No. 625-A contains all six sizes of shaft protectors listed above.

SLIDE HAMMER PULLERS

Fed. Spec.: GGG-P-00781-D

● Pull small gears, bearings, oil seals, etc. ● Wide variety of versatile attachments ● ● ● ● ● ● ● ● ● ●

Whatever your requirement, there's an OTC slide hammer puller to handle it!



REVERSIBLE-JAW SLIDE HAMMER PULLERS OFFER VERSATILITY

Here are two extremely versatile pullers which will accomplish many pulling jobs involving gears, bearings, outer races, grease retainers, oil seals, etc. Either two or three puller jaws may be used, depending on the part to be pulled. Jaws can be positioned to handle "inside" pulling jobs such as bearing cups and outer races, as well as regular "outside" pulling jobs (see page 15 for examples). In addition to these uses, the basic slide hammer unit can be removed from the puller head and jaw assembly and used independently. For example, an OTC bearing cup pulling attachment may be attached to the ⅝"-18 threaded end of the basic slide hammer unit. And, female or male-female adapters (listed on page 13) can be used to connect the slide hammer unit to parts having threaded holes or studs, facilitating their easy removal. The No. 960-B slide hammer puller has a 5 lb. hammer, which eases removal of stubborn flange-type axles, bearings, etc. No. 960 has a 2½ lb. hammer.

A **No. 960**—Slide hammer puller with 2½ lb. hammer. Wt. 8 lbs.

B **No. 960-B**—Slide hammer puller with 5 lb. hammer. Wt. 10½ lbs.

Puller Nos.	2-Jaw Spread				3-Jaw Spread				Overall Length
	Inside		Outside		Inside		Outside		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
960, 960-B	1¼"	3½"	1"	4½"	1½"	4¼"	1½"	4½"	27"

SLIDE HAMMER PULLERS WITH CUP-PULLING ATTACHMENTS

These pullers combine a basic slide hammer unit with a No. 943-B internal pulling attachment (described on page 12). Ideal for removing bearing cups, outer races and oil seals from blind holes. Upon removal of the internal pulling attachment, the basic slide hammer unit, which has a ⅝"-18 threaded end, may be used with various adapters for a multitude of pulling jobs.

C **No. 943-T**—Slide hammer puller, consisting of: 943-B internal pulling attachment and 943-S basic slide hammer unit, which has 2½ lb. hammer. Wt. 9¾ lbs.

D **No. 943-U**—Slide hammer puller, consisting of: 943-B internal pulling attachment and 943-R basic slide hammer unit, which has a 5 lb. hammer. Wt. 12¼ lbs.

Puller Nos.	Min. Spread	Max. Spread	Max. Reach	Overall Length
943-T, 943-U	1⅝"	6"	4"	28"

BASIC SLIDE HAMMER UNITS

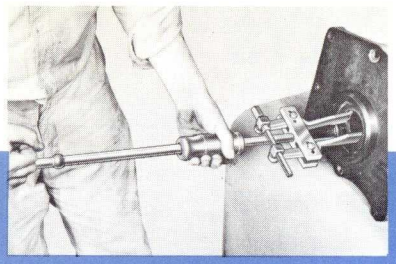
May be used with an OTC internal pulling attachment (see page 12). Also, with female or male-female threaded adapters (see page 13).

E **No. 943-S**—Basic slide hammer unit with 2½ lb. hammer. 24" in length, ⅝"-18 threaded end. Wt. 4¾ lbs.

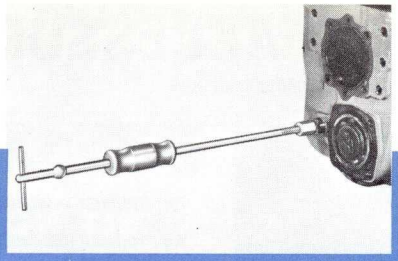
F **No. 943-R**—Basic slide hammer unit with 5 lb. hammer. 24" in length, ⅝"-18 threaded end. Wt. 7¼ lbs.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

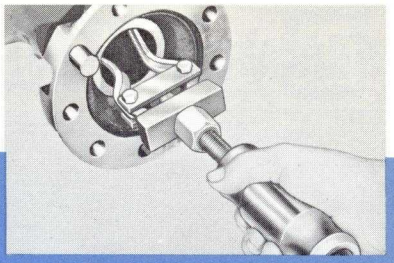
FOR PARTS INFORMATION, SEE OTC PARTS CATALOG



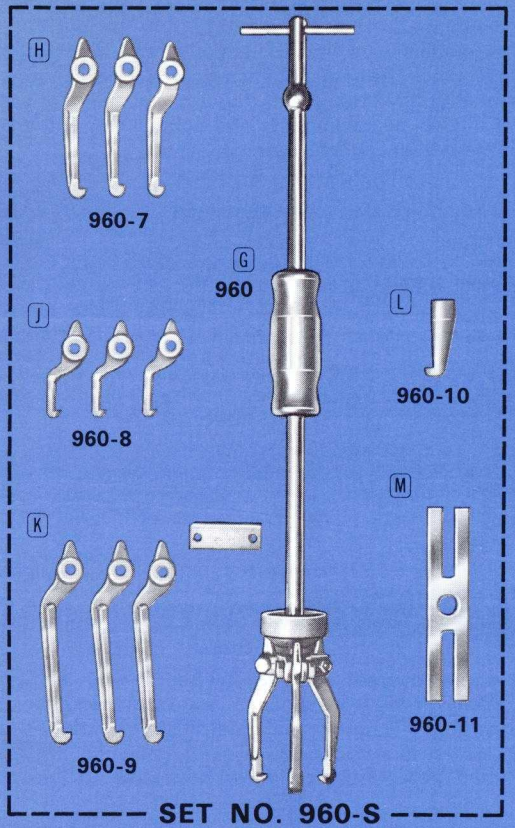
Slide hammer and cup pulling attachment.

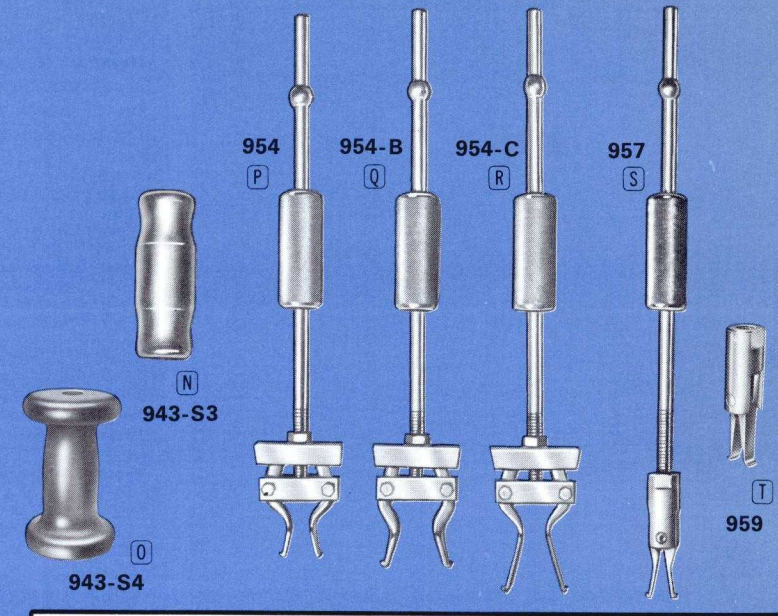


Threaded adapter used with slide hammer.

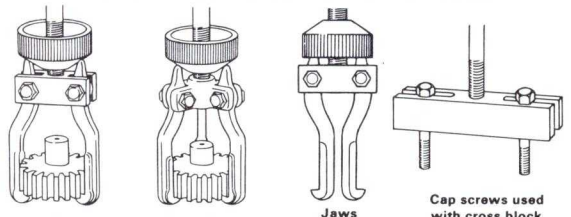


OTC pilot bearing puller shown in use.





APPLICATION EXAMPLES



SLIDE HAMMER PULLER SET

This useful set contains OTC's popular No. 960 reversible-jaw slide hammer puller, plus an assortment of special jaws and adapters. You get all the versatility of the No. 960 (described fully on page 14), plus attachments for pulling various-size pilot bearings, oil seals, bushings, timing gears, harmonic balancers and other tightly-fitted parts!

No. 960-S—Slide hammer puller set. Wt. 13¾ lbs.

SET CONSISTS OF:

- G **No. 960**—Reversible-jaw slide hammer puller with 2½ lb. hammer.
- H **No. 960-7**—Medium jaw (3 incl.)
- J **No. 960-8**—Pilot bearing jaw (3 incl.)
- K **No. 960-9**—Long jaw (3 incl.)

Jaw No.	2-jaw Spread				3-jaw Spread			
	Inside		Outside		Inside		Outside	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
960-7	1½"	4½"	¾"	5"	1½"	4¾"	1"	4½"
960-8	¾"	2⅜"	—	—	1"	2¾"	—	—
960-9	2¾"	5½"	¾"	7½"	3¼"	6¼"	1"	6¼"

- L **No. 960-10**—Puller hook. Removes oil seals, bearings, etc.
- M **No. 960-11**—Cross block. Removes timing gears, harmonic balancers, pulleys, other parts having tapped holes. Uses cap screws up to ⅜" in diameter. Spread with ⅜" dia. cap screws: 1⅞"-5⅝".

SLIDING HAMMERS ONLY

- N **No. 943-S3**—2½ lb. sliding hammer only.
- O **No. 943-S4**—5 lb. sliding hammer only.

OTC PILOT BEARING PULLERS

These very versatile pullers are built especially for inside pulling jobs, and particularly for removing flywheel pilot bearings on automobiles, trucks and tractors. Also very practical for pulling motor, generator and magneto bearings.

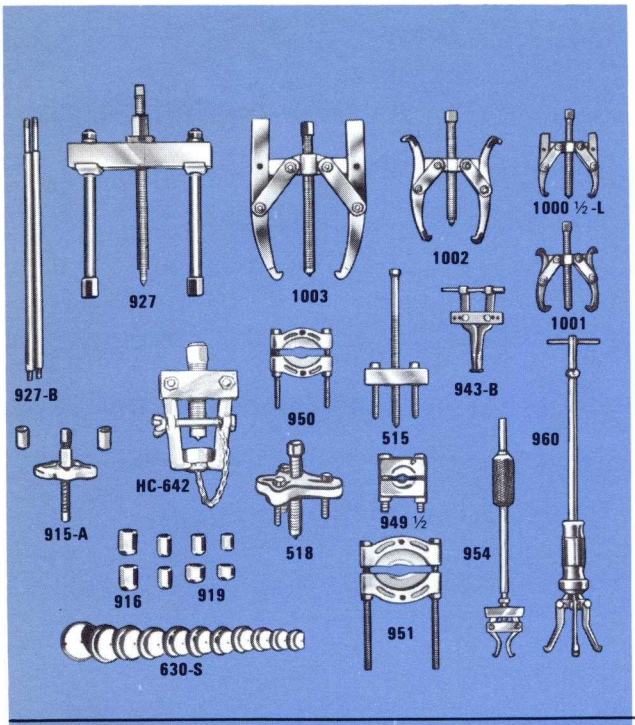
	PULLER NO.	REACH	I.D. SPREAD		WT. (lbs.)
			Min.	Max.	
P	954	¾"	½"	1½"	4⅞
Q	954-B	1"	⅞"	2⅛"	
R	954-C	1¾"	½"	2"	

SPECIAL SLIDE HAMMER PULLER

Ideal for pulling jobs in very close quarters, as in removal of small-bore bushings, bearings, oil seals, etc. Internal pulling attachment has jaw spread of ½" to 1⅜", adjusted by turning slide hammer handle. Handle end has a ½"-20 thread.

- S **No. 957**—Slide hammer puller. Wt. 3½ lbs.
- T **No. 959**—Internal pulling attachment only. Wt. ¾ lb.

PULLER AND ACCESSORY SETS



SET NO. PA-23 13-TON Capacity

Includes all of the pullers, attachments, adapters and accessories required to remove gears, bearings, shafts, pinions, bearing outer races and many other tightly fitted parts. This set is suitable for use on all makes and models of automobiles and light trucks, and will not become obsolete with model changes.

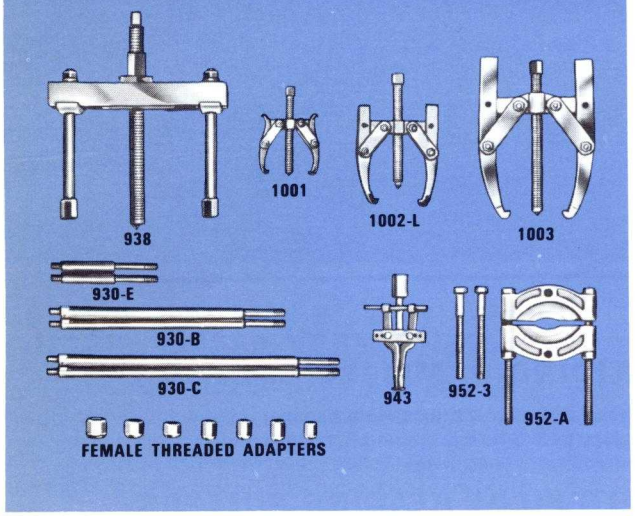
SET CONSISTS OF:

PULLERS	OTC No.
"Push-puller" with 6¾" legs	927
15¾" legs for 927 (pr.)	927-B
2-jaw "Grip-O-Matic" puller	1000½-L
2-jaw "Grip-O-Matic" puller	1001
2-jaw "Grip-O-Matic" puller	1002
2-jaw "Grip-O-Matic" puller	1003
Gear and pulley puller	515
Flange-type puller	518
Steering wheel puller	915-A
Pilot bearing puller	954
Slide hammer puller	960
Pitman arm puller	HC-642

ACCESSORIES	OTC No.
Step plate adapter set	630-S
Female threaded adapter: ½"—20 x ⅝"—18 (2)	916
Female threaded adapter set	919
Bearing cup pulling attachment	943-B
Bearing pulling attachment	949½
Bearing pulling attachment	950
Bearing pulling attachment	951

Weight of set: 72 lbs.

No. PA23-B—Board (3' x 4') for storing PA-23 set (not included with set). Wt. 24 lbs.



SET NO. PE-12 17½-TON Capacity

The versatile pullers and accessories in this set handle parts removal and installation jobs on many models of cars, trucks, tractors, power shovels, road-building machinery, etc. Maintenance operations involving the removal and replacement of gears, bearings, wheels and other press-fitted parts may be performed with ease.

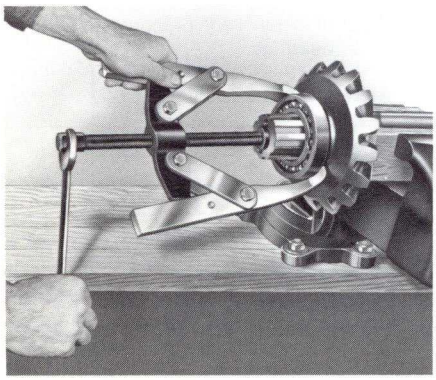
SET CONSISTS OF:

PULLERS	OTC No.
"Push-puller" with 9½" legs	938
16½" legs for 938 (pr.)	930-B
22½" legs for 938 (pr.)	930-C
4½" legs for 938 (pr.)	930-E
2-jaw "Grip-O-Matic" puller	1001
2-jaw "Grip-O-Matic" puller	1002-L
2-jaw "Grip-O-Matic" puller	1003

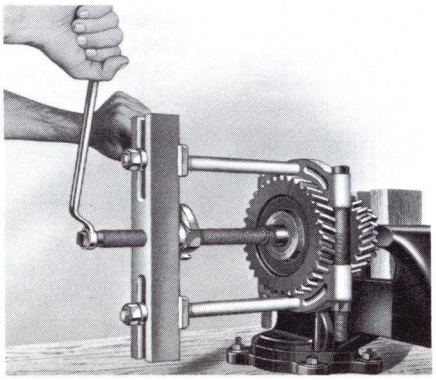
ACCESSORIES	OTC No.
Female threaded adapter: ⅝"—18 x ⅝"—18	920
Female threaded adapters: ⅝"—18 x ¾"—16 (2)	924
⅝"-18 x ⅞"—14	928
⅝"—18 x 1"—14	932
⅝"—18 x 1⅛"—12	936
⅝"—18 x 1½"—12	948
Bearing cup pulling attachment	943
Bearing pulling attachment	952-A
Short bolts for 952-A (2)	952-3

Weight of set: 83 lbs.

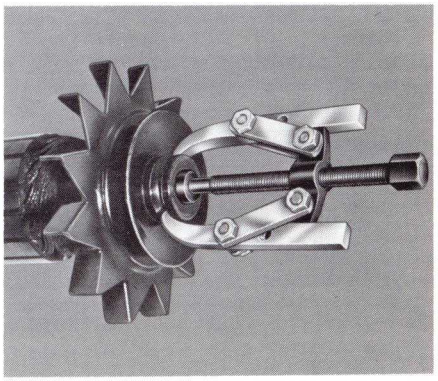
No. PE12-B—Board (3' x 4') for storing PE-12 set (not included with set). Wt. 25 lbs.



Using an OTC "Grip-O-Matic" puller in the removal of a bevel gear bearing.



OTC "Push-puller" used in combination with pulling attachment to remove gear.



The pulley of an automotive generator is removed with a "Grip-O-Matic" puller.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

PULLER SETS WITH OTC POWER-TWIN® HYDRAULICS

17½ TON Capacity — SET NO. Y200-A

SET CONSISTS OF:

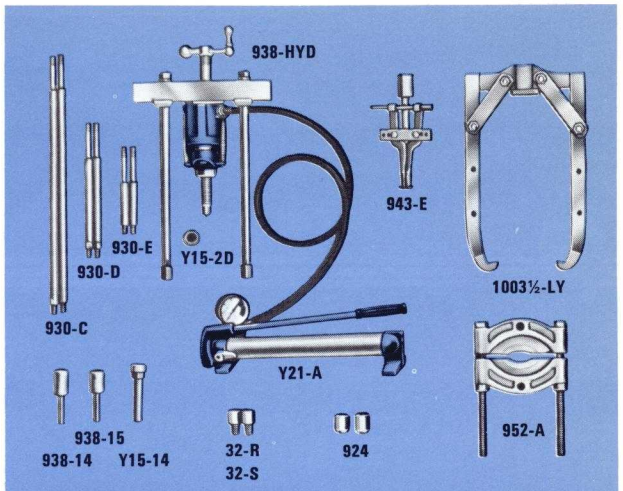
HYDRAULIC PUMP — OTC No.
Single-speed hydraulic hand pump assembly Y21-A

PULLERS
17½-ton capacity hydraulic "Push-puller" with 16½" legs 938-HYD
22½" legs for 938-HYD "Push-puller" (pr.) 930-C
9½" legs for 938-HYD "Push-puller" (pr.) 930-D
4½" legs for 938-HYD "Push-puller" (pr.) 930-E
2-jaw "Grip-O-Matic" puller for use with 17½-ton ram 1003½-LY

ACCESSORIES
Male-female threaded adapter: 1"—8 F. x ⅝"—18 M 32-R
Male-female threaded adapter: 1"—8 F. x 1"—14 M 32-S
Female threaded adapter: ⅝"—18 x ¾"—16 (2 incl.) 924
Pushing adapter 938-14
Pushing adapter 938-15
Bearing cup pulling attachment 943-E
Bearing pulling attachment 952-A
Special plain-hole ram head insert Y15-2D
Jack screw Y15-14

Weight of set: 130 lbs.

No. Y200-B—Board for storing Y200-A set (not included with set). Wt. 31 lbs.



17½ TON Capacity — SET NO. Y-1700

SET CONSISTS OF:

HYDRAULIC PUMP — OTC No.
Single-speed hydraulic hand pump assembly Y21-A

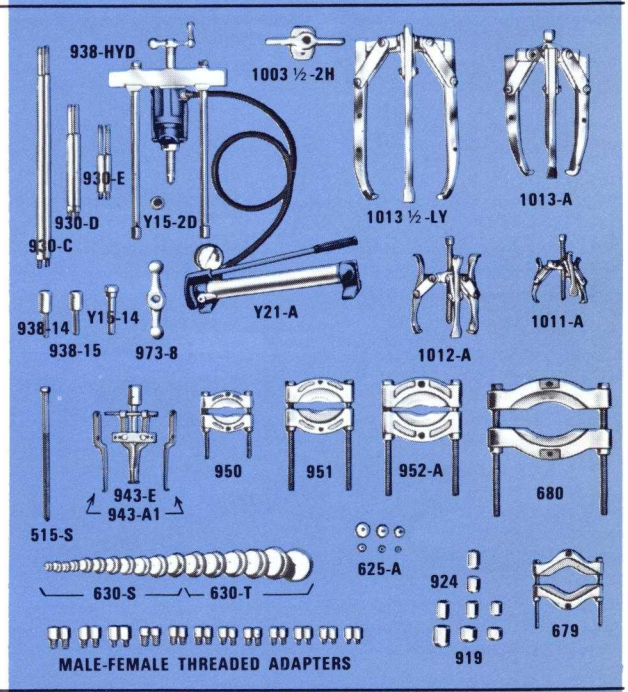
PULLERS
17½-ton capacity hydraulic "Push-puller" with 16½" legs 938-HYD
22½" legs for 938-HYD (pr.) . . 930-C
9½" legs for 938-HYD (pr.) . . . 930-D
4½" legs for 938-HYD (pr.) . . . 930-E
3-jaw "Grip-O-Matic" puller for use with 17½-ton ram 1013½-LY
2-jaw head for 1013½-LY . . . 1003½-2H
Combination 2-jaw, 3-jaw "Grip-O-Matic" puller 1011-A
Combination 2-jaw, 3-jaw "Grip-O-Matic" puller 1012-A
Combination 2-jaw, 3-jaw "Grip-O-Matic" puller 1013-A

ACCESSORIES
Male-female threaded adapters:
⅝"—18 F. x ⅜"—16 M. (2) 15-M
⅝"—18 F. x ½"—20 M. (2) 16-M
⅝"—18 F. x ½"—13 M. (2) 17-M
⅝"—18 F. x ⅝"—11 M. (2) 20-M
⅝"—18 F. x ¾"—16 M. (2) 24-M
⅝"—18 F. x ¾"—10 M. (2) 25-M

Weight of set: 234 lbs.

ACCESSORIES — OTC No.
Male-female threaded adapters:
⅝"—18 F. x ⅞"—14 M. (2) 28-M
⅝"—18 F. x ⅞"—9 M. (2) 29-M
⅝"—18 F. x 1"—14 M. (2) 32-M
1"—8 F. x ⅝"—18 M. (2) 32-R
1"—8 F. x 1"—14 M. (2) 32-S
1"—14 F. x ⅝"—18 M. (2) 21-P
Special puller forcing screw 515-S
Shaft protector set 625-A
Step plate adapter set 630-S
Step plate adapter set 630-T
Pulley pulling attachment 679
Pulley pulling attachment 680
Female threaded adapter set 919
Female threaded adapter:
⅝"—18 x ¾"—16 (2) 924
Pushing adapter 938-14
Pushing adapter 938-15
Bearing cup pulling attachment . . 943-E
Long jaws for 943-E (2) 943-A1
Bearing pulling attachment 950
Bearing pulling attachment 951
Bearing pulling attachment 952-A
Puller screw speed nut 973-8
Plain-hole ram head insert Y15-2D
Jack screw Y15-14

No. Y1700-B—Board for storing Y-1700 set (not included with set). Wt. 68 lbs.



17½ TON Capacity — SET NO. Y-1701

SET CONSISTS OF:

HYDRAULIC PUMP — OTC No.
Single-speed hydraulic hand pump assembly Y21-A

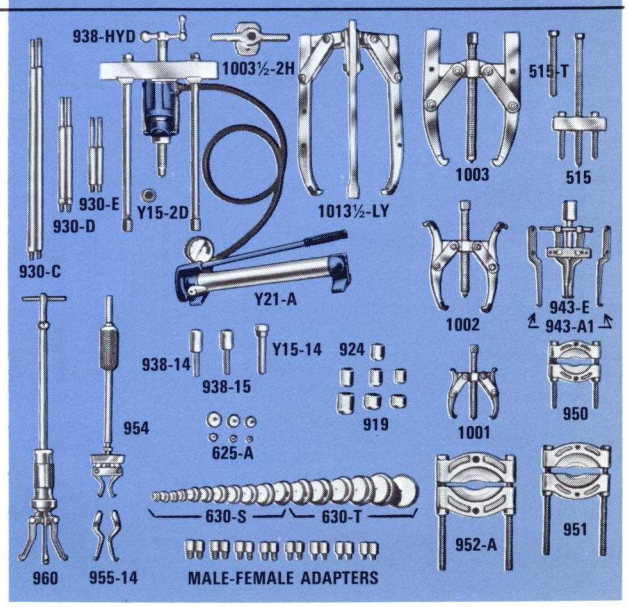
PULLERS
17½-ton capacity hydraulic "Push-puller" with 16½" legs 938-HYD
22½" legs for 938-HYD (pr.) . . 930-C
9½" legs for 938-HYD (pr.) . . . 930-D
4½" legs for 938-HYD (pr.) . . . 930-E
3-jaw "Grip-O-Matic" puller for use with 17½-ton ram 1013½-LY
2-jaw head for 1013½-LY . . . 1003½-2H
2-jaw "Grip-O-Matic" 1001
2-jaw "Grip-O-Matic" puller 1002
2-jaw "Grip-O-Matic" puller 1003
Gear and pulley puller 515
Short forcing screw for 515 . . . 515-T
Pilot bearing puller 954
Long jaws for 954 (2) 955-14
Slide hammer puller 960

ACCESSORIES
Male-female threaded adapters:
⅝"—18 F. x ⅜"—16 M. (2) 15-M
⅝"—18 F. x ½"—20 M. (2) 16-M

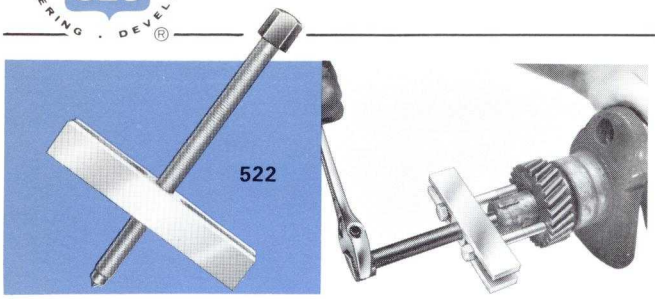
Weight of set: 206 lbs.

ACCESSORIES — OTC No.
Male-female threaded adapters:
⅝"—18 F. x ½"—13 M. (2) 17-M
⅝"—18 F. x ⅝"—11 M. (2) 20-M
⅝"—18 F. x ¾"—16 M. (2) 24-M
⅝"—18 F. x ¾"—10 M. (2) 25-M
⅝"—18 F. x 1"—14 M. (2) 32-M
1"—8 F. x ⅜"—18 M. 32-R
1"—8 F. x 1"—14 M. 32-S
Shaft protector set 625-A
Step plate adapter set 630-S
Step plate adapter set 630-T
Female threaded adapter set 919
Female threaded adapter:
⅝"—18 x ¾"—16. 924
Pushing adapter 938-14
Pushing adapter 938-15
Bearing cup pulling attachment 943-E
Long jaws for 943-E (2) 943-A1
Bearing pulling attachment 950
Bearing pulling attachment 951
Bearing pulling attachment 952-A
Plain-hole ram head insert Y15-2D
Jack Screw Y15-14

No. Y1701-B—Board for storing Y-1701 set (not included with set). Wt. 68 lbs.



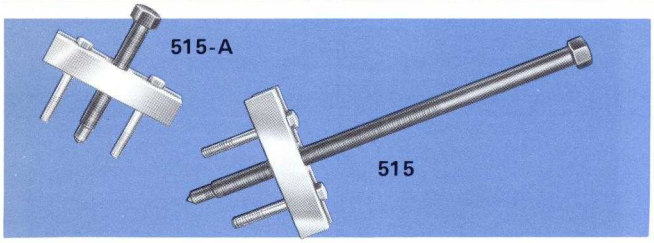
SPECIAL AUTOMOTIVE PULLERS



LARGE GEAR AND PULLEY PULLER

Removes parts having tapped holes, such as gears, pulleys, etc. Cap screws are *not* included with this puller, but any cap screws up to ½" diameter may be used. Spread range when used with ½" dia. cap screws: 2" to 7¾". Puller block is 8¼" wide, forcing screw is 11⅝" long.

No. 522—Large gear and pulley puller.

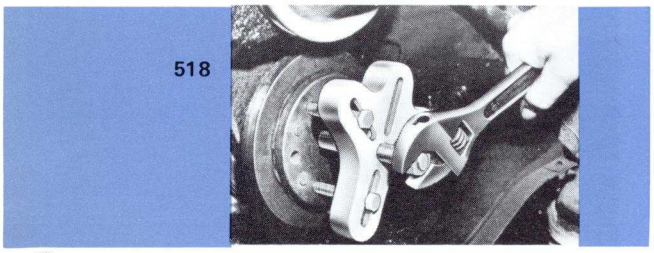


GEAR AND PULLEY PULLERS

Ideal for pulling timing gears, fan pulleys, harmonic balancers and many other parts having tapped holes. Each puller includes two hex head cap screws, ⅜"-16NC x 3" long. Spread range: 1½" to 4¼". Width of puller block: 4⅞".

No. 515—Puller with 13" long screw.

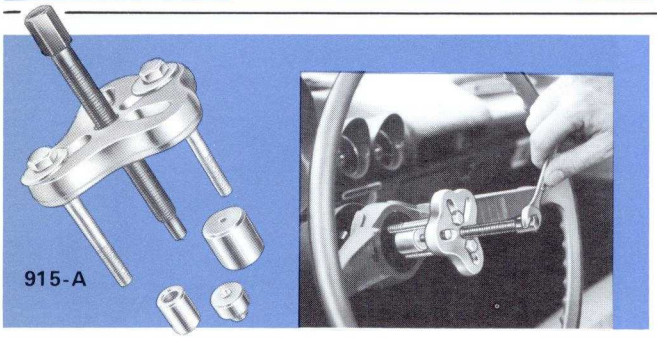
No. 515-A—Puller with 5½" long screw.



FLANGE TYPE PULLER

Quickly and easily pulls harmonic balancers, timing gears and other parts. Works equally well on parts having either two or three tapped holes. Slotted holes in puller body permit cap screws to be positioned to handle bolt-circle diameters from 1½" to 4⅝". Includes three cap screws ⅜"-24NF x 3" long and three cap screws ⅜"-16NC x 3" long.

No. 518—Flange type puller.



STEERING WHEEL PULLER

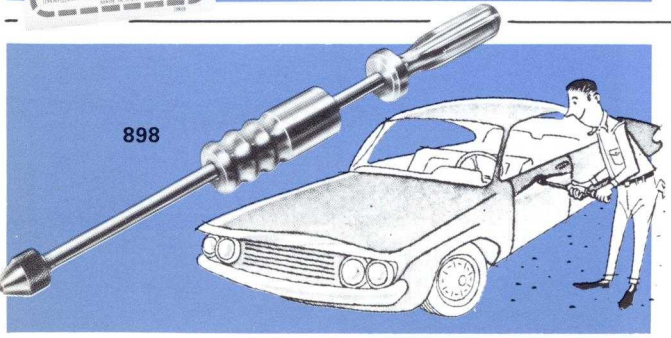
Pulls steering wheels on most makes of late model cars. Supplied with three sets of cap screws: (2) ⅜"-16NC cap screws; (2) 5/16"-18NC cap screws; (2) 5/16"-24NF cap screws. Can also be used as a regular two or three-way puller to remove pulleys, small flywheels, etc. Works on nearly all GM, Ford and Chrysler automobiles with or without collapsible steering columns.

No. 915-A—Steering wheel puller.

STEERING WHEEL LOCK PLATE REMOVER

The new OTC No. 7031 Steering Wheel Lock Plate Remover will simplify removal and installation of the round, wire snap-rings retaining steering wheel lock plates. This new tool is a must for access to turn signal switches on current models of GM cars. For all late model GM, AMC and Chrysler model cars with either "tilt" column or conventional steering columns.

No. 7031—Steering wheel lock plate remover.



BODY AND FENDER DENT PULLER

Easily removes or pulls out those hard-to-get-at dents and creases in auto bodies. Pulls dents from fenders, side panels, door panels and tops *without* time-consuming removal of inside panels and upholstery. A hole is drilled at the base of the dent and the tool's self-tapping screw is threaded into it. A few sharp blows of the slide hammer will pull the dent out. Tool is 17" long, has Pyralin handle grip and replaceable sheet metal screw. Instructions included.

No. 898—Body and fender dent puller.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

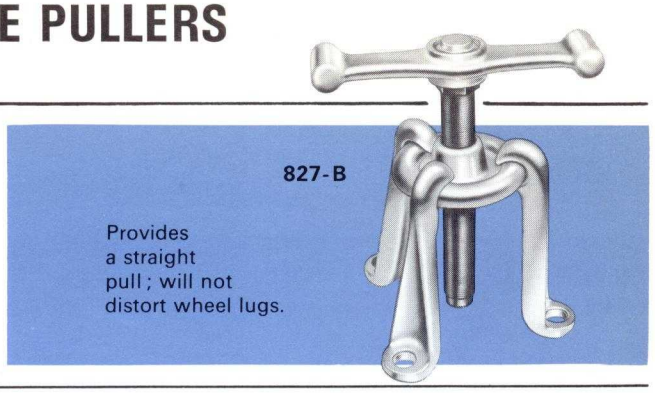
FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

SPECIAL AUTOMOTIVE PULLERS

UNIVERSAL HUB PULLER

Has readily adjustable sliding arms to pull wheel hubs quickly and easily. Maximum reach is 7½" bolt circle. Provides a straight pull, will not distort wheel lugs. Five legs should be used on Cadillac and Jeep hubs. Striking wrench and puller screw included.

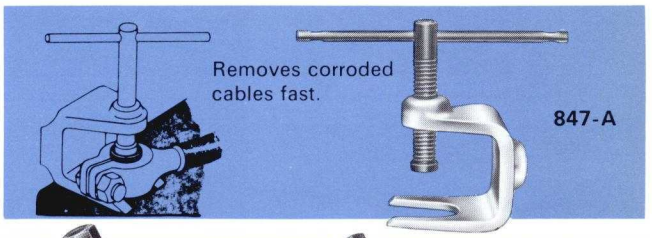
No. 827-B—Universal hub puller.



BATTERY TERMINAL PULLER

Easily removes battery terminals from posts without damage to battery cover. Special striking pad on puller takes the blow of a hammer when it is necessary to drive jaws under terminal.

No. 847-A—Battery terminal puller.

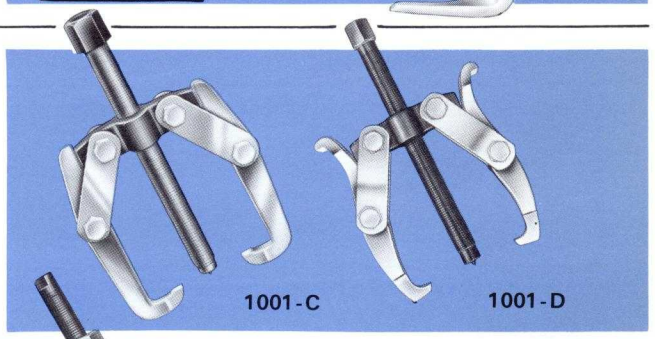


DIFFERENTIAL BEARING PULLERS

For removing differential side carrier bearings of a wide variety of passenger cars and light trucks. Must be used with step plate adapters found on page 13. (Step plate adapters are not included with 1001-C or 1001-D.)

No. 1001-C—Puller with 3½" maximum reach, 1¼" to 4½" spread. Primarily for servicing Ford products.

No. 1001-D—Puller with 3¼" maximum reach, 6" maximum spread. For servicing most General Motors, American Motors and Chrysler products.

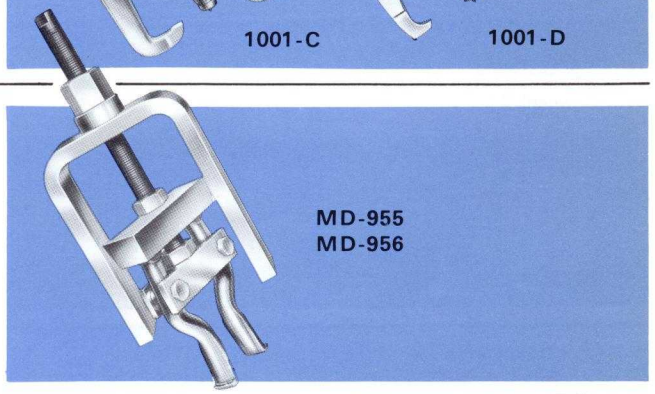


POPULAR OTC PILOT BEARING PULLERS

Designed to pull flywheel pilot bearings in close quarters where slide hammer cannot be used. Operates on many models with engine in chassis.

No. MD-955—Pilot bearing puller: cap. ½" to 1½" I.D.; Reach, 1".

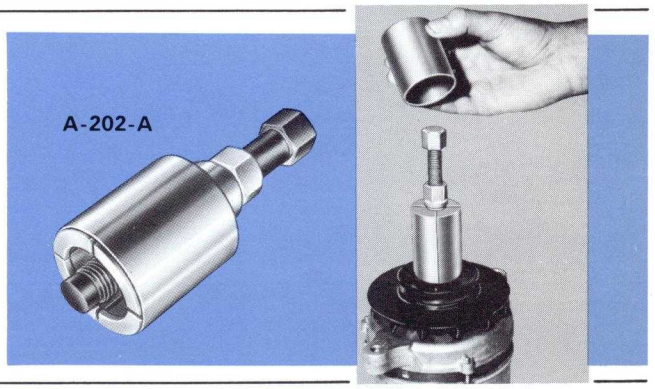
No. MD-956—Pilot bearing puller: cap. ⅞" to 2" I.D.; Reach, 1".



PULLEY AND DRIVE END BEARING PULLER

Used to remove pulley from Chrysler and Ford alternators and power steering pumps. Puller screw is butted up against rotor shaft and the four removal jaws placed in position. Jaws are held in position with a tube-type retainer. Four jaws grip flange of pulley or bearing for safe and easy removal. Unique four-jaw design permits puller to remove the double-groove Chrysler pulley . . . normally a difficult job. Also removes drive-end bearing from Ford and Chrysler alternators.

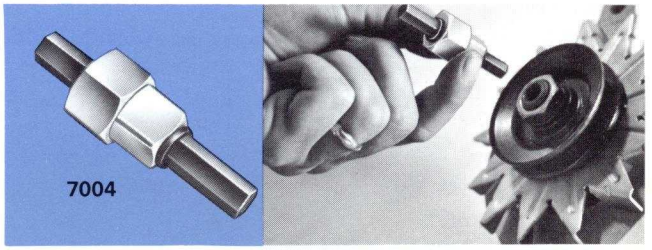
No. A-202-A—Pulley and drive end bearing puller.



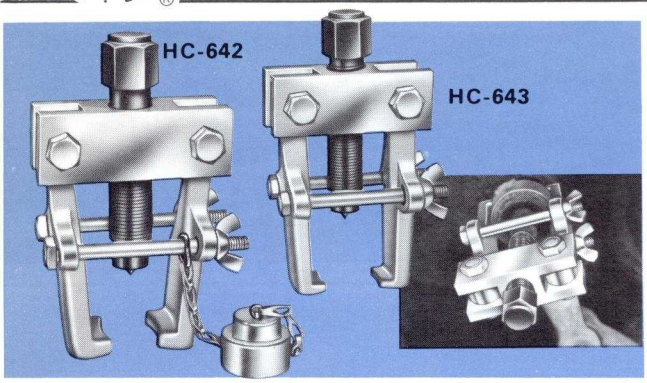
ALTERNATOR PULLEY NUT REMOVER/INSTALLER

Tool holds the alternator shaft stationary while tightening or loosening pulley nut on '65 through current Ford alternators. Pulley nut can be torqued by holding pulley nut and applying torque wrench to hex shaft in tool. Simplifies the tough job of removing and installing the alternator pulley.

No. 7004—Alternator pulley nut remover/installer.



FRONT SUSPENSION TOOLS



PITMAN ARM PULLERS

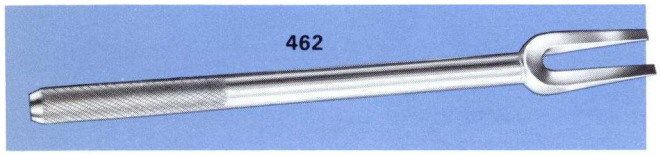
Two pullers available. Pitman arm pullers are designed to handle the toughest pitman arm pulling job. Pullers are adjustable and have special forged jaws shaped to fit the job. Pullers have two clamp bolts that lock jaws on the pitman arm for pulling, assuring positive grip and leaving hands free for the pulling job. No. HC-642 includes adapter for added versatility. Both pullers will perform many other pulling jobs.

No. HC-642—Pitman arm puller. (Medium and heavy trucks).
No. HC-643—Pitman arm puller. (Passenger cars and light trucks to ¾-ton).

PITMAN ARM WEDGE

Removes pitman arms on cars and light trucks. Wedge-end is placed between parts and a few hammer blows separate them. 11" long.

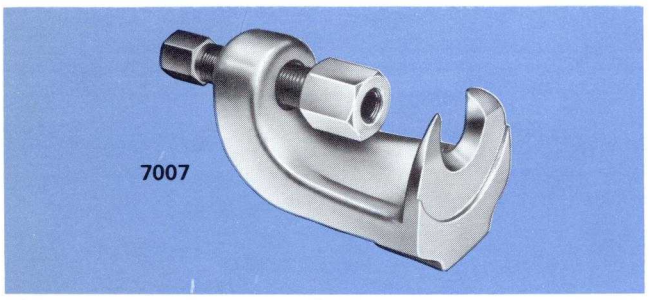
No. 844—Pitman arm wedge.



SHOCK LINK AND TIE ROD SEPARATOR

Separates shock absorber links and tie rods. Tapered wedge-end is inserted between parts, handle is hit with hammer. 16" long.

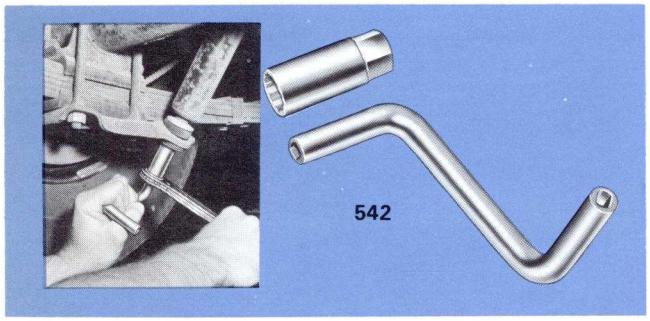
No. 462—Shock link and tie rod separator.



UNIVERSAL TIE ROD END REMOVER

Tool is inserted between spindle arm connecting the tie rod and drag link or steering arm. Tool is centered by means of three pilot protector nuts which prevent damage to threads on the three sizes of ball studs in use. Tie rod end remover is universal in application for most car makes. Web reinforced tool makes tie rod end and control valve ball stud removal an easy and fast operation, without damage to other parts.

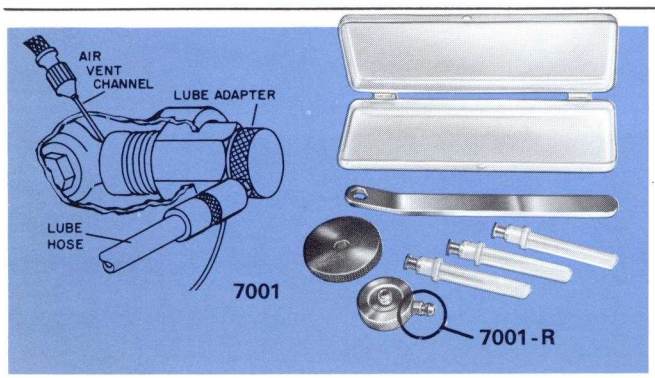
No. 7007—Universal tie rod end remover.



SHOCK ABSORBER SERVICE SET

Permits fast and easy shock absorber removal and installation. Tool set consists of a socket and holding handle. Handle holds flattened end of shock absorber piston or attaching stud as socket is turned with an 1 1/16" ratcheting box wrench (not included) to remove or install the shock absorber retaining nut. Clearance limitations caused by suspension components, etc., present no problem. Set services shock absorbers on a wide variety of passenger cars and light trucks. The socket has a 9/16" 12 pt. opening. Each end of the holding handle has a different size opening.

No. 542—Shock absorber service set.



UPPER ARM BUSHING LUBE KIT

For easy and fast lubrication of upper arm cross shaft bushings on '65 thru current light Ford cars and Thunderbird. Kit eliminates the need for cutting the tower sheet metal for access. Hex screw is removed with wrench and spinner provided. Air vent channel is inserted under bushing and through rubber seal. Lube adapter is threaded into place. A standard grease gun (hand or air) is used to lubricate until lubricant overflows through air vent channel.

No. 7001—Upper arm bushing lube kit.
No. 7001-R—Package of five grease fittings.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

FRONT SUSPENSION TOOLS

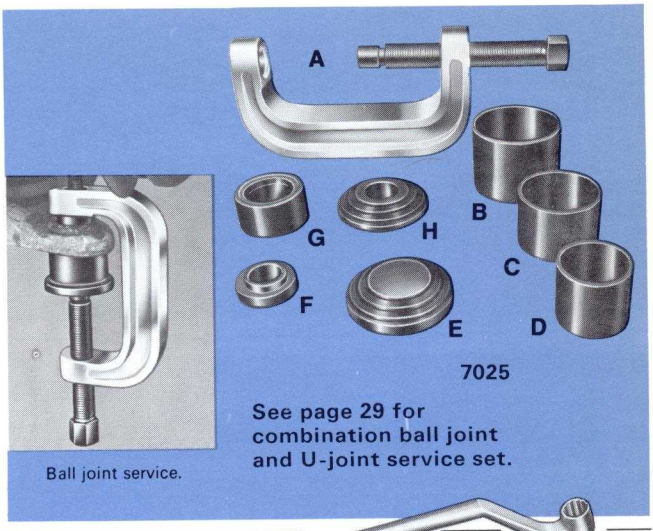
BALL JOINT REMOVING-INSTALLING SET

Removal and replacement of ball joints on most car makes and models can be accomplished without resorting to makeshift, "brute force" methods that are unsafe and can damage costly components. Forcing screw-powered press, used with proper adapters, easily removes and installs all press-fit ball joints.

NO. 7025 SET CONTENTS

Item	Part No.	Description
A	7025-A	Press
B	29503	Receiver Tube, 3" OD x 2¾" ID
C	29504	Receiver Tube, 2½" OD x 2¼" ID
D	29505	Receiver Tube, 2" OD x 1¾" ID
E	29506	Removing Adapter
F	29507	Remover
G	29508	Installer
H	34716	Installing Adapter

No. 7025—Ball joint service set.



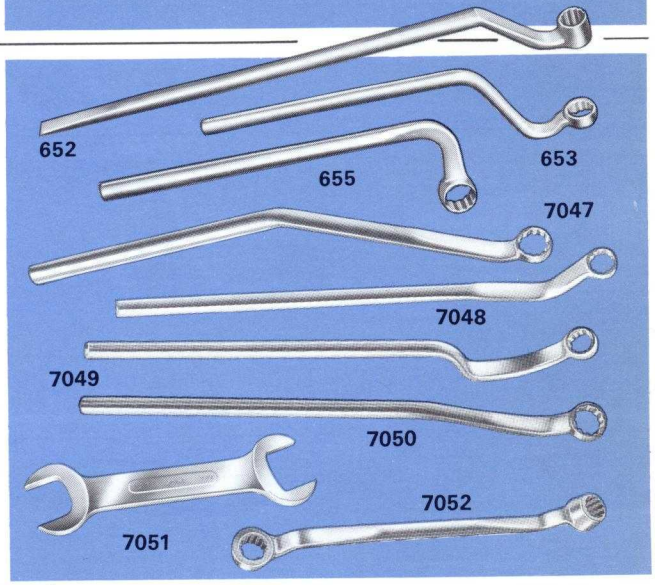
Ball joint service.

See page 29 for combination ball joint and U-joint service set.

FRONT END SUSPENSION TOOLS

These new tools allow the mechanic to perform fast and trouble-free service on front-end alignment and shim pack work. Long handles provide ample leverage to loosen rusted or corroded parts. Designed to adjust caster and camber on late model cars having ball joint suspensions.

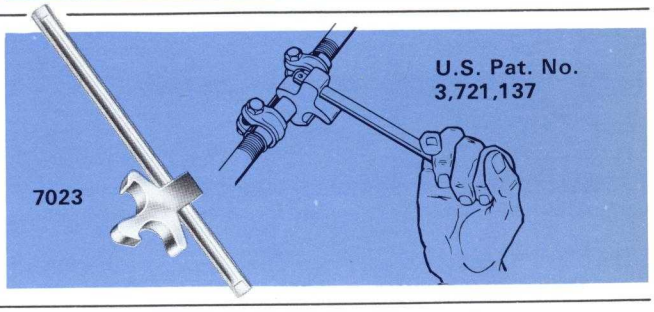
No. 652—For Ford through '64 (¾" opening)
No. 653—For Mercury through '64 (¾" opening)
No. 655—For all Vega; also Rambler thru '61 (15/16" opening)
No. 7047—For late model Buick (⅞" opening)
No. 7048—For Chevelle, Buick Special, Pontiac Tempest and Olds F-85 (11/16" opening)
No. 7049—For late model Toyota (17mm opening)
No. 7050—For full-size Chevrolet, Buick, Oldsmobile and Pontiac, '71 thru current (¾" opening)
No. 7051—For camber adjustment only on Cadillacs, '61 thru current, except El Dorado (1⅜" and 1½" openings)
No. 7052—For Pontiac and Tempest, '64 thru current. Won't interfere with radiator when loosening or tightening cross shaft bolts (11/16" and ¾" openings)



TIE ROD ADJUSTING TOOL

Don't reach for a pipe wrench when tie rod adjustment is necessary. This new tool easily does the job the *right* way! Permits 360° rotation of sleeve for required adjustment. Four-position feature lets you locate tool to grip sleeve properly . . . even when access is limited. Universal-services most models of compact and standard-size passenger cars and light trucks.

No. 7023—Universal tie rod adjusting tool.



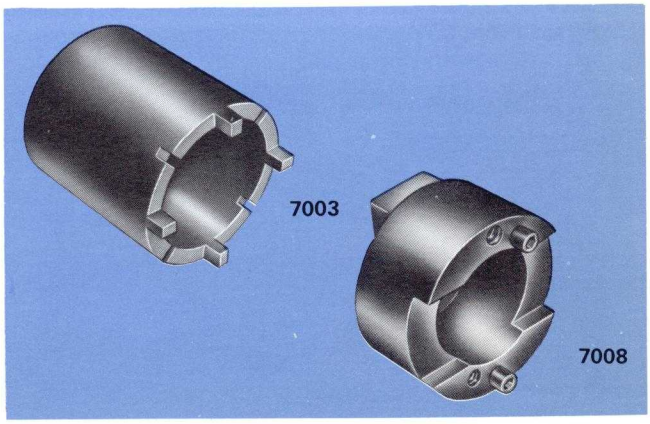
FRONT WHEEL BEARING LOCK-NUT WRENCHES

Wrench No. 7003 is designed to fit spanner holes in the adjusting and lock-nuts used on front wheel bearings of 4-wheel drive Chevrolet and GMC ½-ton ('60-current), Blazer and Bronco ('66-current), Ford F-100-250 ('59-current) and Dodge ½-ton vehicles ('69-current). A ½" drive square is provided to allow the use of a torque wrench for accurate adjusting.

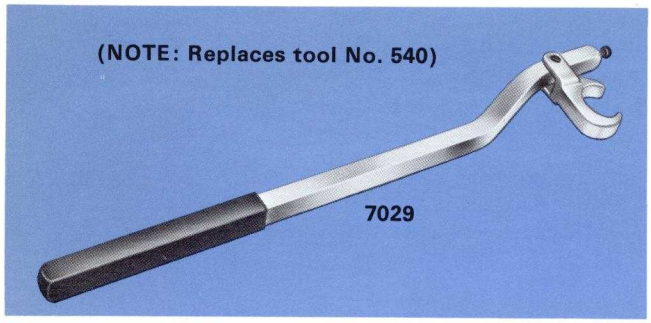
No. 7003—Front wheel bearing lock-nut wrench.

For adjusting and locking the adjuster nuts on Ford 9,000 lb. and 11,000 lb. front axles, the 7008 lock-nut wrench adapts to either one of the two sizes involved by simple relocation of two allen screws. Clearance is provided for the spring lock feature on the axles and a square drive allows direct use of a torque wrench for proper bearing adjustment.

No. 7008—Front wheel bearing lock-nut wrench.



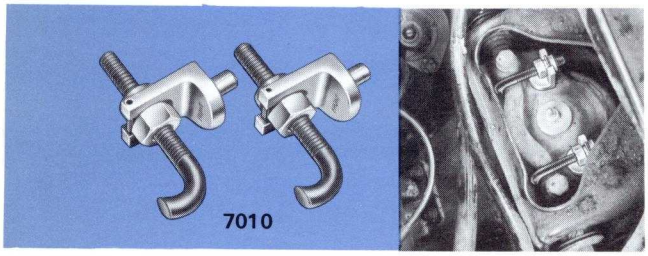
FRONT SUSPENSION TOOLS



CASTER-CAMBER WRENCH

Improved design permits getting around obstructing components under the hood of all '65 through current model Mercurys, Fords, Thunderbird and Mark III cars, also Chrysler mid-year intermediate models and all '74 thru current Chryslers, including Imperials.

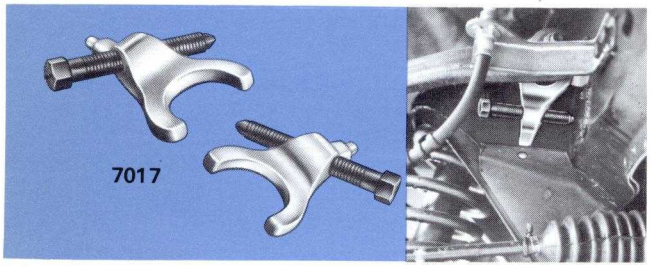
No. 7029—Caster-camber wrench.



CASTER-CAMBER ADJUSTER

Perfect for getting around air conditioning unit and other obstructing components under the hood. Two-piece tool set provides for fast, efficient caster-camber adjustment on '65 thru current Ford, Mercury, Thunderbird and Mark III cars, as well as Chrysler mid-year intermediates and all '74 thru current Chryslers, including Imperials. Provides necessary leverage for moving upper arm cross shaft to make alignment corrections. Mechanic has complete control of adjustment at all times.

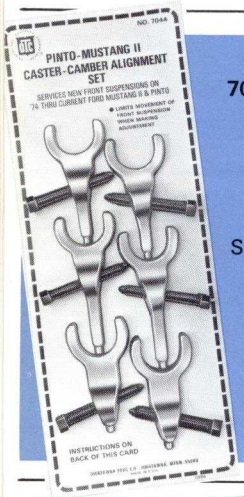
No. 7010—Caster-camber adjuster.



PINTO CASTER-CAMBER ADJUSTER

Two-piece tool used on the Ford Pinto to limit movement of the front suspension when setting caster and camber. Makes front-end alignment of this new car fast and easy.

No. 7017—Pinto caster-camber adjuster.

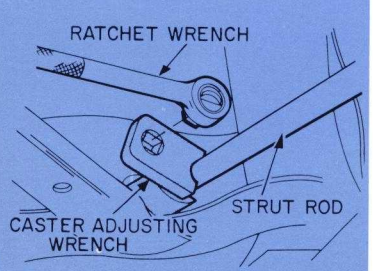


Shown positioned on upper control arms.

PINTO AND MUSTANG II CASTER-CAMBER ADJUSTING SET

OTC's special automotive tools make the difference, and here's a set that assures the mechanic fast and accurate settings of the caster and camber on '74 thru current Pinto and Mustang II front suspensions. It's designed to effectively limit the movement of front suspensions after the cross shaft bolts have been loosened. Tool Set No. 7044 includes all the alignment tools needed to service the control arms.

No. 7044—Set contains six alignment tools for front and rear, right and left application on vehicle's control arms.



7046

CADILLAC-CHEVROLET CASTER ADJUSTING WRENCH

Troublesome caster adjustment on late model Cadillacs and Chevrolets is made a lot easier by using the No. 7046 Caster Adjusting Wrench. Designed especially for '61 thru current Cadillacs and '65 thru '70 Chevrolets, this special wrench slips over the strut rod and permits adjusting the caster when the retaining nut is located deep inside frame member where standard open end wrenches cannot go. Rugged, durable construction lets you loosen even rusted retaining nuts. To be used with ½" drive ratchet or flex handle (not included).

No. 7046—Cadillac-Chevrolet caster adjusting wrench. Wt., 1 lb. 7 oz.

FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

BRAKE SERVICE TOOLS

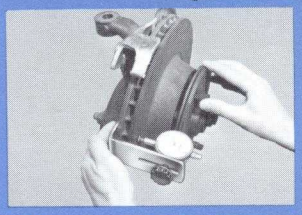
DISC BRAKE ROTOR CHECKING TOOL

Take the guesswork out of measuring two critical disc brake tolerances—lateral runout and variation in rotor thickness with the OTC No. 7037 Disc Brake Rotor Checking Tool. This tool positively assures you that all precise rotor dimensions are within the manufacturer's specs—so important for a professional brake job on today's new style disc brakes. The No. 7037 measures these tolerances in .0001" increments! Everything you need to perform both checks is in this tool set. Easy to use. Easy to read dial.

No. 7037—Disc brake rotor checking tool with plastic storage case. Wt., 2 lbs. 4 oz.

A precision measuring instrument with universal application.

7037



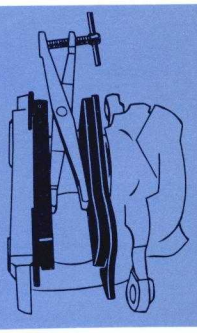
Measures rotor thickness variation.

Checks lateral runout accurately.

DISC BRAKE PAD SPREADER

No longer must disc brake pad installation be awkward, hard and time consuming. The OTC No. 7034 Disc Brake Pad Spreader fits between the two new pads being installed, is then expanded to retract the piston. With the pads now held firmly in place, you have both hands free to start the caliper over the rotor. After it's started, the spreader is removed and you slide the caliper over the rotor the rest of the way. It's that easy! Installation time is cut dramatically. Works on all standard and four-piston caliper disc brakes. An extremely rugged tool that's easy to use.

No. 7034—Disc brake pad spreader. Ship. wt., 9 oz.

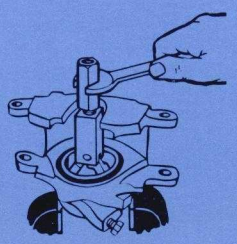


7034

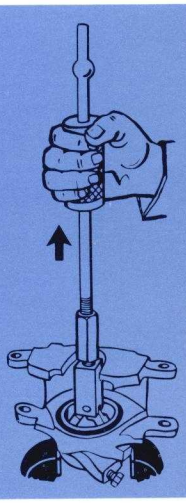
DISC BRAKE PISTON PULLER

If you service today's disc brakes, this tool is a must! Removes disc brake pistons with hollow centers from both single and four piston calipers. Handles pistons 1" to 2¾" in diameter, regardless of their condition. Simply insert tool until jaws bottom in piston. Tighten expander to imbed jaw points in piston. Attach a universal slide hammer (use any slide hammer with ½"-20 or ⅝"-18 threaded end). A few sharp blows of the slide hammer do the job. *Straight* pull prevents piston from cocking in caliper. Tool will not distort piston or cause it to bind in caliper. This tool is a real time-saver!

No. 7022—Disc brake piston puller.



1. Clamp caliper in a vise.
2. "Bottom" jaws in piston.
3. Tighten expander to imbed jaw points.
4. Use slide hammer to pull piston.



7022

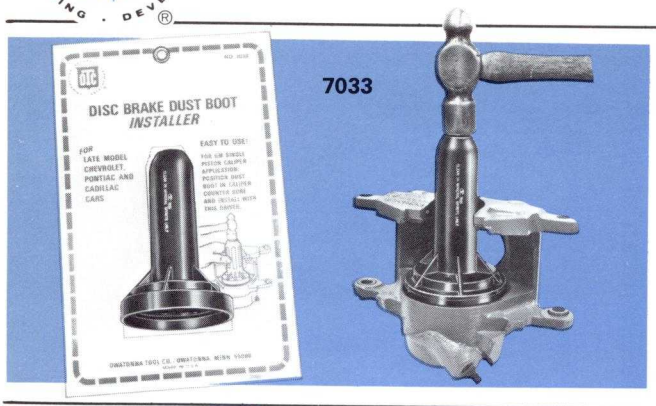
DISC BRAKE DUST BOOT INSTALLER SET

The new OTC No. 7030 Disc Brake Dust Boot Installer consists of two installing rings and a handy oil seal pick to easily and quickly install dust boots on new-style Ford and Chrysler single-piston calipers. The No. 7030 will cut installation time of dust boots for any shop doing brake work.

No. 7030—Disc brake dust boot installer set.

7030

BRAKE SERVICE TOOLS



DISC BRAKE DUST BOOT INSTALLER

The OTC No. 7033 Disc Brake Dust Boot Installer easily and quickly installs the dust boots on General Motors single-piston caliper disc brakes. Made to work on '68 thru current model Chevrolets and Pontiacs as well as '69 thru current model Oldsmobiles, Buicks and Cadillacs. This handy little tool will really help to increase your brake-work turnover! Insures an even installation of dust boots. Virtually eliminates chance of bending the metal retaining ring of the dust boot.

No. 7033—Disc brake dust boot installer.

As a set, the 7040-K can handle a majority of the disc brake servicing you'll face.

7040-K

DISC BRAKE SERVICE SET

Here's a complete disc brake service kit designed by OTC to give quality service on today's new-style disc brakes—to cut time and increase profits. The four tools in the set, described below, are packaged in a handy plastic carrying and storage case.

No. 7040-K—Disc brake service set with carrying case.

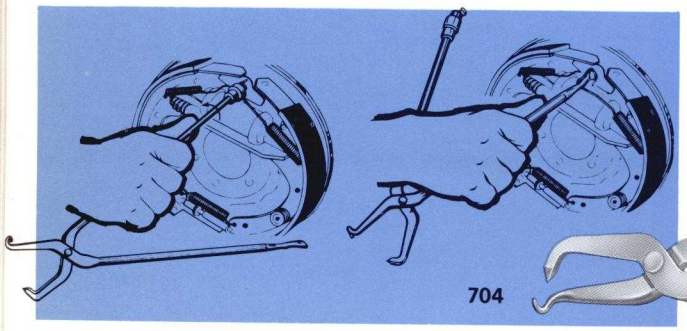
Contents of 7040-K Set

No. 7022—Disc brake piston puller
No. 7033—Disc brake dust boot installer for GM single-piston caliper disc brakes found on many late models
No. 7030—Disc brake dust boot installer for new-style Ford and Chrysler single-piston caliper disc brakes
No. 7034—Disc brake pad spreader

HORSESHOE LOCK RING PLIER

This ruggedly-built OTC plier is designed to spread and remove horseshoe lock rings used on hydraulic brakes, differentials and transmissions. 8" long; maximum spread of 1⅜".

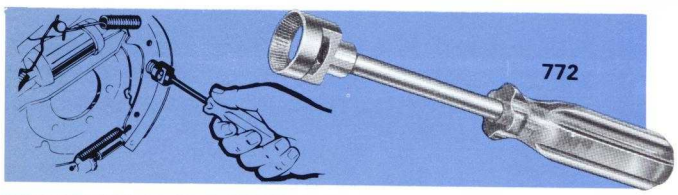
No. 714—Horseshoe lock ring plier.



BRAKE SPRING PLIER

An extremely useful tool for removing and installing brake springs on nearly all makes of cars and light trucks. Has special fittings on handle ends for various-type brakes. 13½" in length.

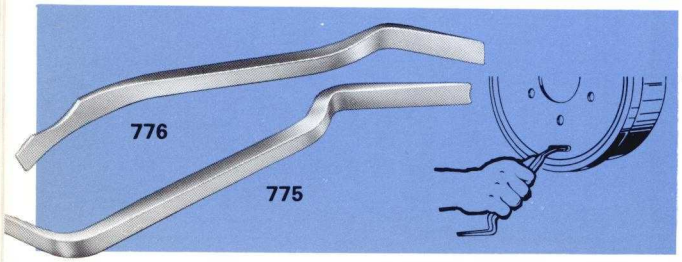
No. 704—Brake spring plier.



BRAKE SHOE SPRING TOOL

Removes and installs brake shoe hold-down spring. Deep knurled cup holds spring securely. Plastic handle gives sure grip. 7¼" long.

No. 772—Brake shoe spring tool.



IMPROVED BRAKE ADJUSTING SPOONS

Here are two excellent tools that make brake adjustment fast and easy. No. 775 adjusts brakes on most cars and light trucks. No. 776 is especially designed for Corvair and Ford products, but adjusts certain other brakes, also. Both tools are 9¼" long.

No. 775—Brake adjusting spoon.
No. 776—Brake adjusting spoon.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

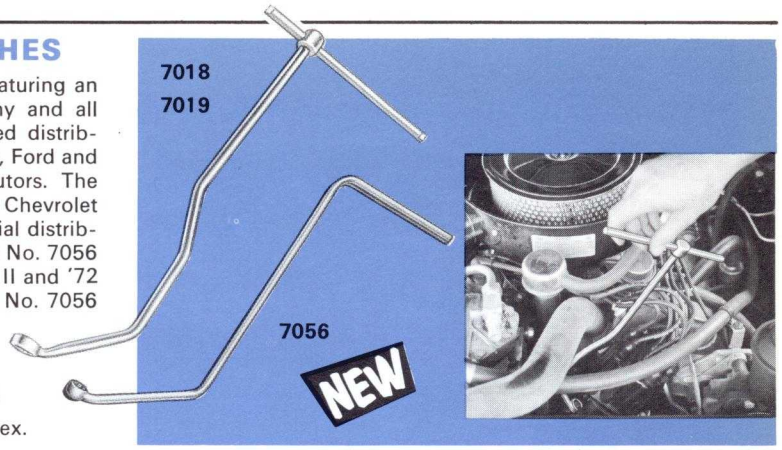
DISTRIBUTOR LOCK NUT WRENCHES

OTC has two universal distributor lock-nut wrenches featuring an exclusive "sliding" handle which facilitates use on any and all makes of automobiles with either front or rear-mounted distributors. The No. 7018, ½" size, fits Chrysler Corp., Cadillac, Ford and Mercury automobiles with front or rear-mounted distributors. The 9/16" size, the No. 7019, fits Buick, Pontiac, Oldsmobile, Chevrolet and AMC automobiles. OTC has also developed a special distributor lock-nut wrench for the new Ford V-6 engines. The No. 7056 permits access to lock-nuts on '74 thru current Mustang II and '72 thru current Capri autos with 2.8 litre V-6 engines. The No. 7056 features a 13mm double hex opening.

No. 7018—Distributor lock-nut wrench, ½" double hex.

No. 7019—Distributor lock-nut wrench, 9/16" double hex.

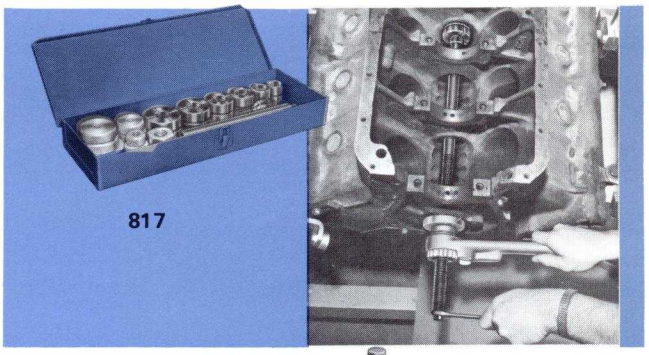
No. 7056—Distributor lock-nut wrench, 13mm double hex.



ENGINE CAMSHAFT BEARING REMOVING AND INSTALLING SET

Services a wide range of auto, truck and tractor camshaft bearings! Handles bearings of 1.125" to 2.750" I.D. Bearings are removed and installed, without damage, by a uniform pulling action. Burring, which often results when bearings are hammered into engine block, is prevented. A unique collet adapter expands to precisely fit the bearing's I.D. A few easy turns of the pulling nut does the job. Alignment of bearing and block oil holes is simplified, too! Includes six expanding collet sizes, plus necessary puller screw and attachments, all packed in a sturdy metal storage box. Complete instructions furnished.

No. 817—Camshaft bearing service set.



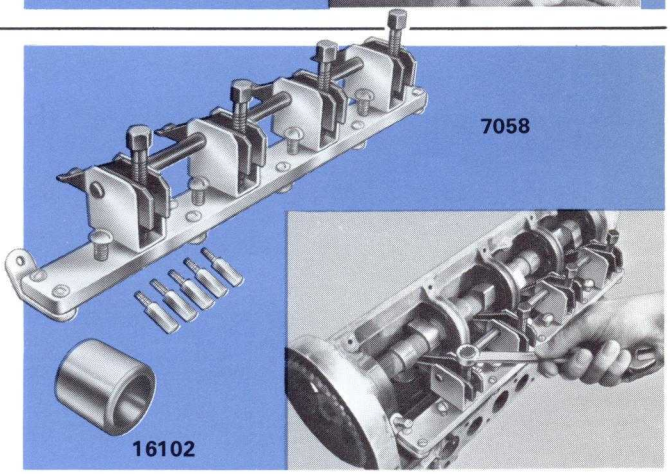
VEGA CAMSHAFT REMOVER/INSTALLER

NEW

The cylinder head design of the Vega OHC engine necessitates camshaft removal before the valves or cam followers can be serviced. The No. 7058 Vega Camshaft Remover and Installer's four rocker shoes compress the valve springs, allowing the camshaft to be removed. Cylinder heads can be serviced on or off the car. Rugged steel construction provides long tool life.

No. 7058—Vega camshaft remover and installer.

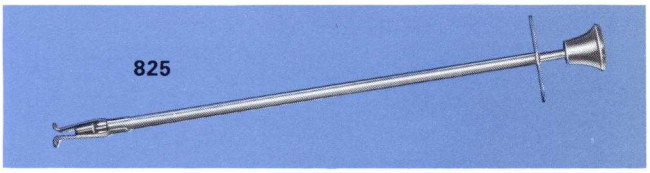
No. 16102—Valve spring adapter (sold separately). Used with the No. 7058, aids in valve keeper removal. Fits over the valve spring and provides the extra length needed when compressing springs for valve removal. It is suggested that at least a pair of these adapters are used at a time.



HYDRAULIC VALVE LIFTER PULLER

Specially designed tool to go down through the push rod holes and expand inside the lifter to pull lifter out of bore. On engines where there is room between the intake manifold and head, it is not necessary to remove intake manifold to replace lifters.

No. 825—Hydraulic valve lifter puller.



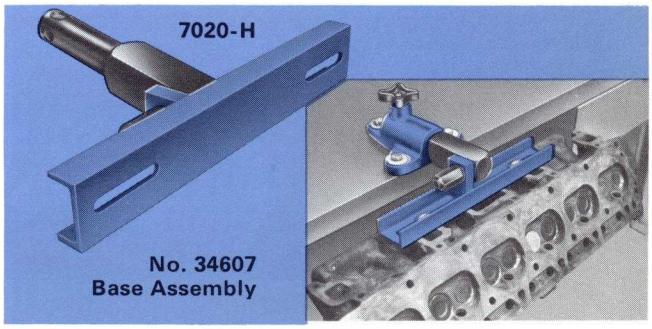
HEAD MOUNTING FIXTURE

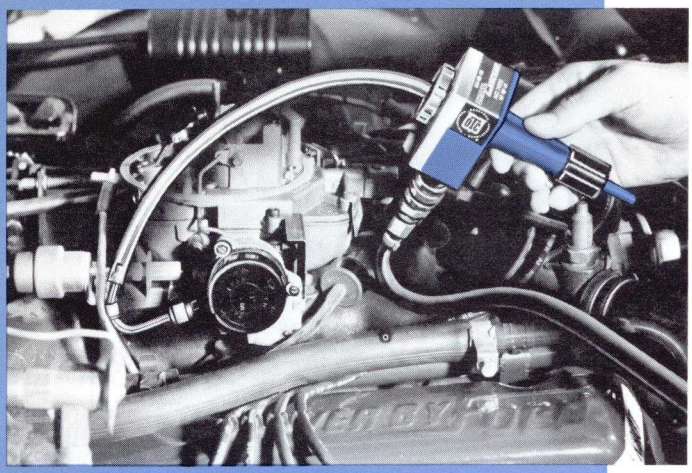
Adds new versatility to the No. 7020 Bench Holding Fixture . . . page 32. Permits sturdy mounting of cylinder heads for valve spring removal, valve guide and seat work. Ideal for various drilling and reaming operations. Leaves bench clear for other work. Includes pivot, lock screw and head holder.

No. 7020-H—Head mounting fixture (base assembly not included).

No. 34607—Base assembly only.

No. 7020—Bench-mounted holding fixture. Wt., 9½ lbs. Turn to page 32 for ordering information.





END AUTOMATIC CHOKE SERVICE COME-BACKS . . .

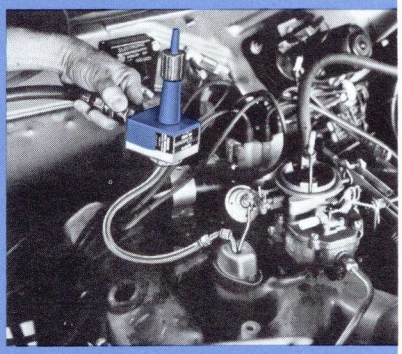
with the new

CHOKE CHECKER™

- Lets you properly check choke operation without carburetor disassembly.
- Works on both carburetor-mounted and in-manifold (well-type) chokes.
- Also generates hot or cold air to check automatic temperature control systems.

CHECK CHOKE

In just 60 seconds, the OTC Choke Checker chills the bi-metal spring to close the choke butterfly, simulating troublesome cold-start conditions.



U.S. Pat. Nos. 3,786,643 and 231,943

No longer must you wait hours for engine cool down before tackling a choke adjustment job. In just 60 seconds, Choke Checker chills the bi-metal spring to close the choke butterfly, simulating troublesome, cold-start conditions. Then, after adjustment, you use Choke Checker again to confirm that the setting is correct. There's no guesswork . . . profit-robbing customer come-backs are a thing of the past. Can also be used to apply hot or cold air to the in-car sensor of automatic temperature control systems. Choke Checker will generate temperatures as low as —10°F. to +10°F. and as high as 160°F. to 180°F. Uses normal shop air supply.

EASY TO USE . . .

TO CHECK CHOKES

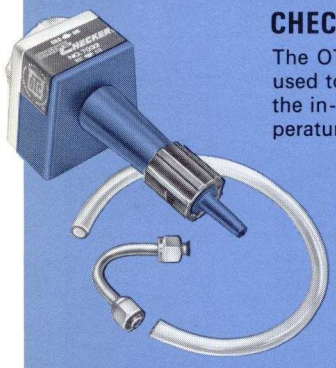
1. With Choke Checker attached to shop air supply, direct cold air on choke's bi-metal control spring.
2. After operating the Choke Checker for one minute, determine if choke has closed completely. When necessary repair or adjustment has been made, warm up engine and repeat the cool-off test to assure that the adjustments are correct.

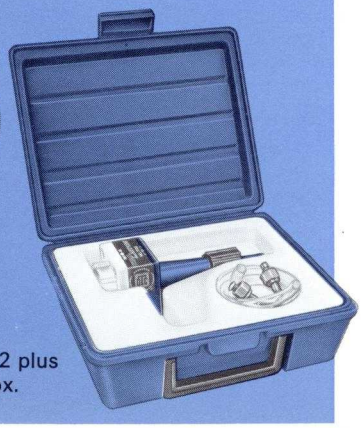
TO CHECK OPERATION OF AUTOMATIC TEMPERATURE CONTROL SYSTEMS

1. Use Choke Checker to direct hot air on the in-car sensor to determine if air conditioner is properly responding to rising temperatures.
2. Use Choke Checker to direct cold air on the in-car sensor to determine if heater is properly responding to falling temperatures.

CHECK TEMPERATURE

The OTC Choke Checker can also be used to apply hot or cold air to the in-car sensor of automatic temperature control systems.





HOW TO ORDER

No. 7032—Consists of Choke Checker unit, 12" polyurethane hose and special attachment adapter with fittings.

No. 7032-K—Contains the same items as the No. 7032 and is packed in a handy plastic storage box.

No. 15077—Plastic storage box ***only.***

No. 7032
Choke Checker, 12" polyurethane hose and adapter.

No. 7032-K
Same as No. 7032 plus plastic storage box.

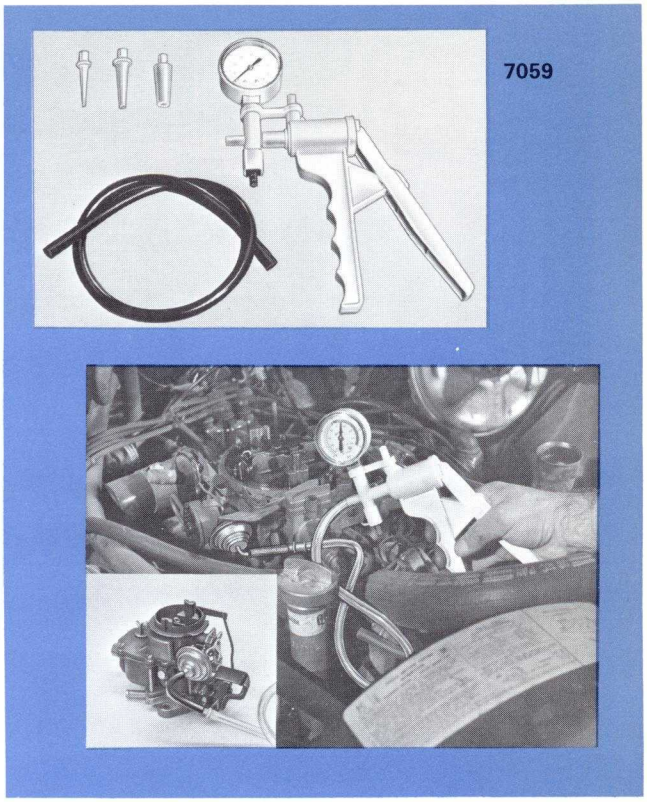
NEW

VACUUM PUMP

- **Checks all vacuum operated components.**
- **Ideal for use on cars, trucks, motorcycles, tractors and boats.**

OTC now offers a hand-held, hand-operated vacuum pump with universal application. This unique tool, the No. 7059 Vacuum Pump, is used in checking, measuring and adjusting various vacuum operated components. The No. 7059 creates and holds a metered vacuum for pumping, testing and servicing a wide variety of automotive, marine, aircraft and agricultural equipment. The Vacuum Pump is crafted of durable high impact PVC. It is a self-lubricating, maintenance-free, sealed, non-corrosive unit. Safe, no-spark action! This light-weight unit has a pumping rate of one cu. in./stroke and attains a vacuum of up to 25 inches of mercury in a few seconds. The nozzle on the pump press-fits to standard ¼" I.D. tubing and through various accessories, is quickly adaptable to an infinite number of applications. Set includes hand-held pump along with 2-foot plastic hose and three adapters. Some of the already proven uses include checking: air intake control valve, distributor vacuum advance, EGR valve, power brakes, transmission modulator and motorcycle carburetors.

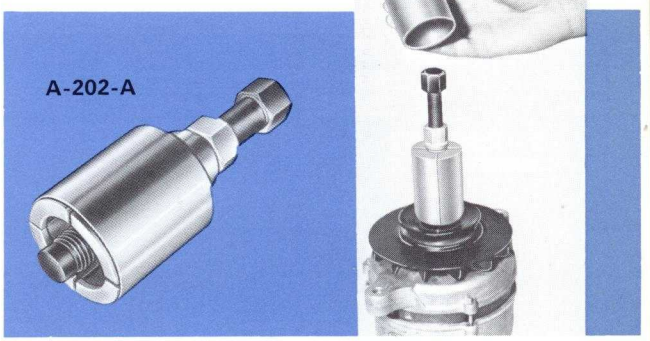
No. 7059—Hand-held vacuum pump with 2-foot plastic hose and set of three adapters. Wt., 8 oz.



PULLEY AND DRIVE END BEARING PULLER

Used to remove pulley from Chrysler and Ford alternators and power steering pumps. Puller screw is butted up against rotor shaft and the four removal jaws placed in position. Jaws are held in position with a tube-type retainer. Four jaws grip flange of pulley or bearing for safe and easy removal. Unique four-jaw design permits puller to remove the double-groove Chrysler pulley . . . normally a difficult job. Also removes drive end bearing from Ford and Chrysler alternators.

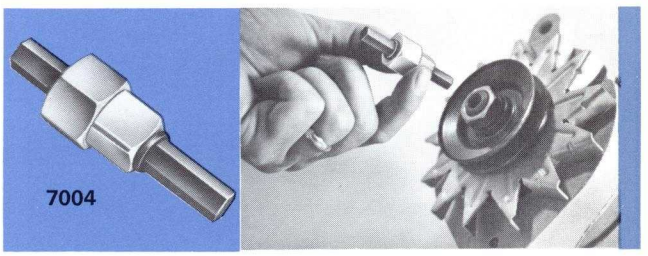
No. A-202-A—Pulley and drive end bearing puller.



ALTERNATOR PULLEY NUT REMOVER/INSTALLER

Tool holds the alternator shaft stationary while tightening or loosening pulley nut on '65 through current Ford alternators. Pulley nut can be torqued by holding pulley nut and applying torque wrench to hex shaft in tool. Simplifies the tough job of removing and installing the alternator pulley.

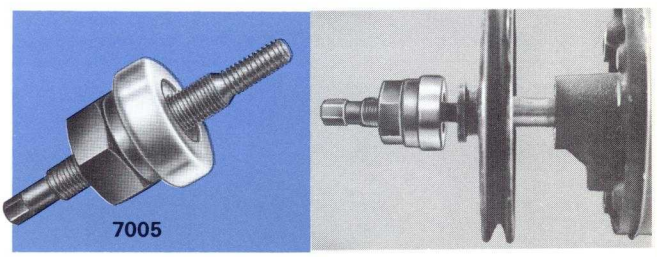
No. 7004—Alternator pulley nut remover/installer.

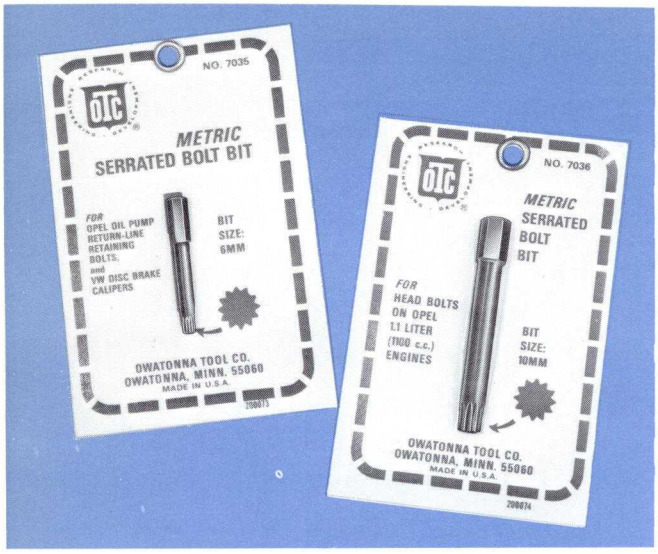


POWER STEERING PUMP PULLEY REPLACER

Required to properly replace the pulley on Ford power steering pumps. On slipper-type power steering pumps, pulling or pushing force cannot be exerted through the pump shaft or damage to internal parts may occur. Roller bearing in tool allows easy turning effort and tool shape prevents damage to pump. A must when working on Ford power steering pumps.

No. 7005—Power steering pump pulley replacer.




NO. 7035
METRIC SERRATED BOLT BIT
FOR OPEL OIL PUMP RETURN-LINE RETAINING BOLTS, and VW DISC BRAKE CALIPERS
BIT SIZE: 6MM
OWATONNA TOOL CO. OWATONNA, MINN. 55060 MADE IN U.S.A.
NO. 7036
METRIC SERRATED BOLT BIT
FOR HEAD BOLTS ON OPEL 1.1 LITER (1100 c.c.) ENGINES
BIT SIZE: 10MM
OWATONNA TOOL CO. OWATONNA, MINN. 55060 MADE IN U.S.A.

METRIC SERRATED BOLT BITS

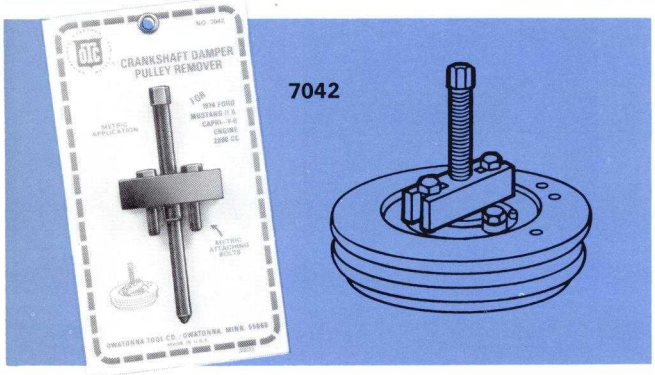
OTC has introduced four special metric tools to make the servicing of imports and some small American cars with metric fasteners less of a struggle. Triple-square bit provides damage-free removal and installation of these special metric serrated fasteners.

No. 7015—8mm serrated bolt bit removes and installs the specially shaped socket head bolts retaining the oil pump on Pinto engines (2,000cc) and Opel serrated fasteners except head bolts.

No. 7016—12mm serrated bolt bit easily removes and replaces the special head bolts in the cylinder head of Ford Pinto 2 litre OHC engines and Opel 1.9 litre (1900cc) engines without damage.

No. 7035—6mm serrated bolt bit makes the disassembly of VW and Opel disc brake caliper halves fast and easy. Design permits use of torque wrench. On Buick Opel, bit also loosens or tightens retaining bolts on the oil pump return line.

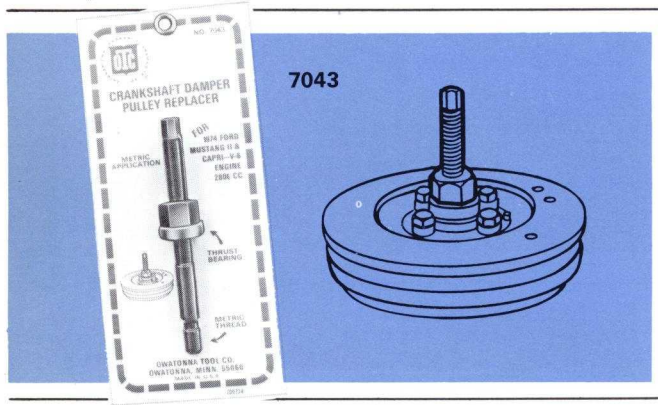
No. 7036—10mm serrated bolt bit is a perfect fit on the metric engine cylinder head bolts on 1.1 litre Buick Opel engines.



CRANKSHAFT DAMPER PULLEY REMOVER

Remove that pulley right away with the OTC No. 7042 Crankshaft Damper Pulley Remover. Designed for '74 thru current model Mustang II and Capri V-6 metric engines (2800cc), this tool eliminates damage to the crankshaft threads and the pulley during servicing. The special metric cap screws (included) attach puller block to damper . . . forcing screw bears against the bottom of the tapped hole in crank to remove damper. A valuable tool for any shop.

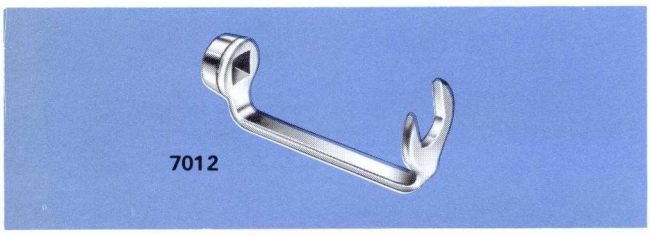
No. 7042—Crankshaft damper pulley remover. Wt., 11 oz.



CRANKSHAFT DAMPER PULLEY REPLACER

Now you can install crankshaft damper pulleys on '74 thru current Mustang II and Capri V-6 metric engines (2800cc) the proper way . . . using OTC's No. 7043 Crankshaft Damper Pulley Replacer. Thread metric forcing screw into the crankshaft and turn the thrust bearing nut assembly to press the pulley onto the crankshaft. The use of the 7043 eliminates possible damage to the pulley which exists when a hammer is used.

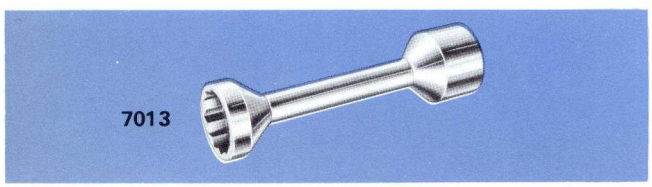
No. 7043—Crankshaft damper pulley replacer. Wt., 7 oz.



VALVE ADJUSTING LOCK SCREW NUT WRENCH FOR PINTO

A specially designed wrench for use on the Pinto automobile with 2 litre OHC engine to permit torque wrench application for proper tightening of the valve adjusting screw lock nut. Provides access to the center valves without removing the oil supply tube.

No. 7012—Valve adjusting lock screw nut wrench.



PINTO HEAD BOLT WRENCH

Torquing of the head bolts on the Pinto 1600cc engine is no problem when you have this specially designed head bolt wrench. Work is accomplished easily and quickly without the removal of the rocker arm shaft.

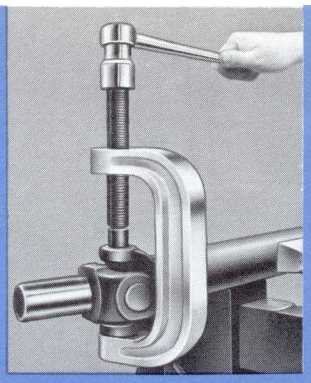
No. 7013—Head bolt wrench.

UNIVERSAL JOINT REMOVING-INSTALLING SET

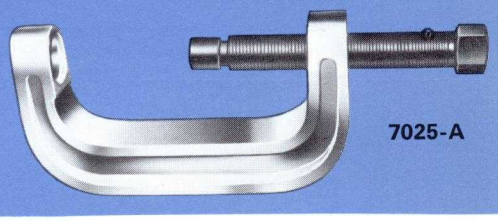
Removal and replacement of universal joints on most car makes and models can be accomplished without resorting to makeshift, "brute force" methods that are often unsafe and can damage costly components. Forcing screw-powered press is used to remove and replace automotive universal joints with needle-type bearings (including new GM plastic-pin C.V. type U-joints).

No. 7025-A—Universal joint removing-installing set.

No. 7025—Universal joint and ball joint service set. Includes press No. 7025-A plus adapters necessary for performing ball joint service. See page 21 for additional information.



Service to U-joints can be made faster and easier with the OTC No. 7025-A.

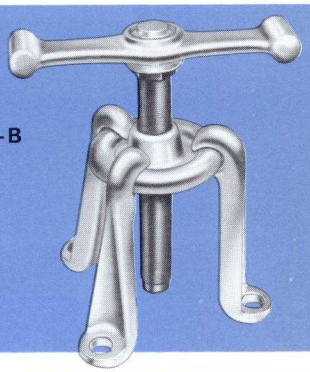


7025-A

UNIVERSAL HUB PULLER

Has readily adjustable sliding arms to pull wheel hubs quickly and easily. Maximum reach is 7½" bolt circle. Provides a straight pull, will not distort wheel lugs. Five legs should be used on Cadillac and Jeep hubs. Striking wrench and puller screw included.

No. 827-B—Universal hub puller.



827-B

Provides a straight pull; will not distort wheel lugs.

SLIDE HAMMER REAR AXLE PULLER

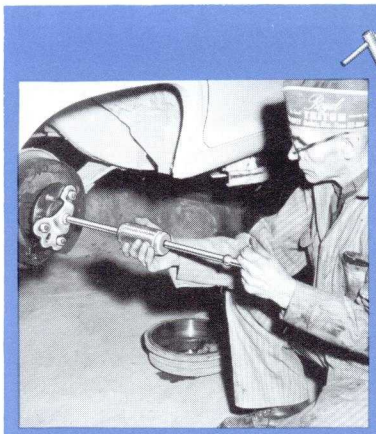
Slide hammer rear axle puller comes in two sizes. Large size fits most model passenger cars and light trucks for removal of flange-type rear axles. With 5-pound slide hammer and pulling plate, larger unit services axles with bolts or studs up to 9/16" dia. Fits 4, 5, or 6-bolt stud circle to 5 9/16". Small version of adapter plate with 5-pound slide hammer is for Ford Pinto and other small-car axles. Has minimum bolt circle of 4¼". Maximum hub diameter of 2½" . . . bolt studs to 9/16" dia. Fits 4, 5, or 6-bolt stud circle.

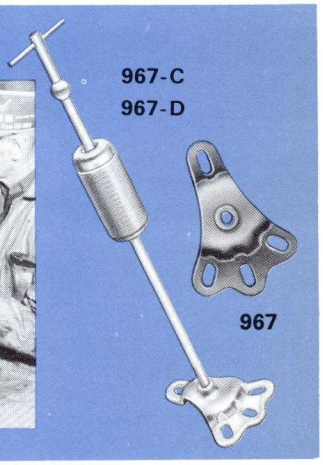
No. 967-C—Rear axle pulling plate with 5-pound slide hammer assembly.

No. 967—Rear axle pulling plate, only.

No. 967-D—Rear axle pulling plate with 5-pound slide hammer assembly (Ford Pinto and other small-car axles).

No. 967-A—Rear axle pulling plate, only (Ford Pinto and other small-car axles).





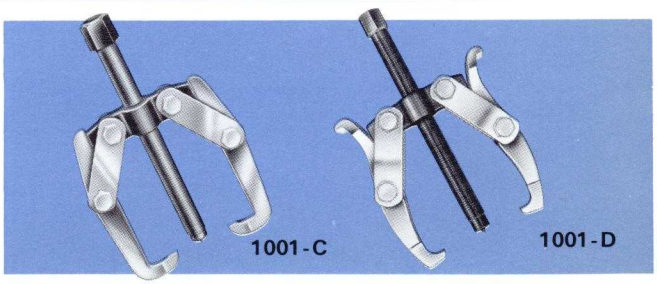
967-C
967-D
967

DIFFERENTIAL BEARING PULLERS

For removing differential side carrier bearings of a wide variety of passenger cars and light trucks. Must be used with step plate adapters found on page 13. (Step plate adapters are not included with 1001-C or 1001-D.)

No. 1001-C—Puller with 3½" maximum reach, 1¼" to 4½" spread. Primarily for servicing Ford products.

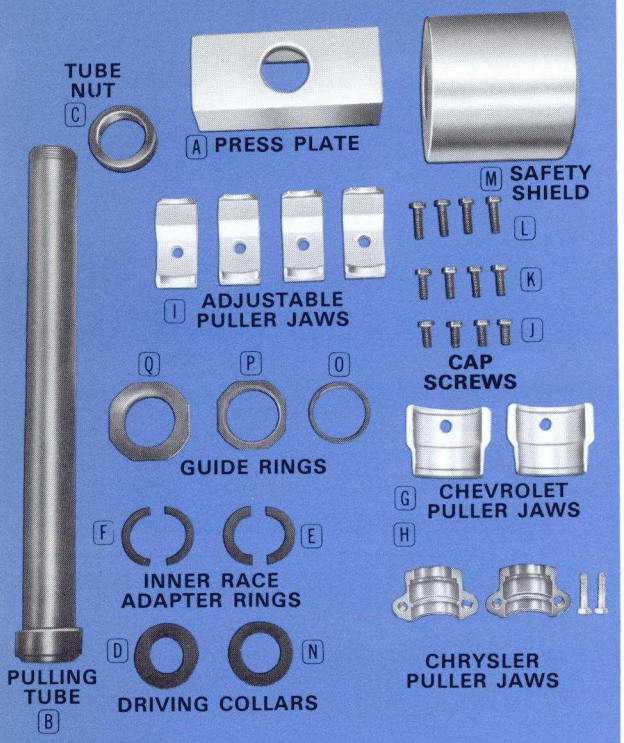
No. 1001-D—Puller with 3¼" maximum reach, 6" maximum spread. For servicing most General Motors, American Motors and Chrysler products.



1001-C

1001-D

Service Set No. 7026



REAR AXLE *BEARING* PULLER/INSTALLER SET

- **Universal tools remove, install bearings of a wide variety of makes and models.**
- **Designed for use with a hydraulic shop forcing press.**

Do you presently have to depend on an outside source to handle your rear axle bearing pressing jobs? Now you can keep this *profitable* work in your own shop . . . to save money, to save time! The tools of this universal set, used with a hydraulic press of at least 17½-ton capacity, remove and install bearings of flange-type axles or tapered roller axle bearings on General Motors, Ford, Chrysler, American Motors and some foreign cars . . . plus light trucks. Best of all, the tools will *not* become obsolete as new vehicles are introduced . . . the adjustable puller jaws adapt to a wide range of sizes. You invest once and once only!

Broken bearings present no problem . . . special adapters are provided for removing the inner race. Safety was also a prime consideration when this set was designed. The tooling withstands up to 20 tons of force, and includes a special safety shield which, when placed over the bearing when force is applied, offers protection to the operator from possible flying bearing fragments.

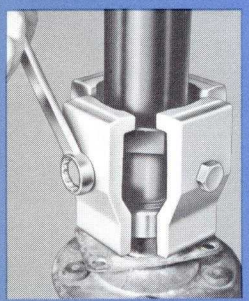
No. 7026—Rear axle bearing service set. Wt., 40 lbs.

Contents of No. 7026 Set

- A **No. 34798**—Press plate.
- B **No. 34799**—Pulling tube.
- C **No. 29638**—Pulling tube nut.
- D **No. 29639**—Driving collar, 1½" I.D.
- N **No. 29640**—Driving collar, 1¾" I.D.
- O **No. 29641**—Guide ring.
- P **No. 34796**—Guide ring.
- Q **No. 34797**—Guide ring.
- E **No. 29656**—Inner race pulling adapter ring (2 incl.).
- F **No. 29657**—Inner race pulling adapter ring (2 incl.).
- G **No. 34779**—Puller jaw (2 incl.) for Chevrolet, '55-'64.
- H **No. 36112**—Puller jaw (pair) for Chrysler Corporation cars, '65 thru current models 2⅞" O.D. bearings (Replaces former 34780).
- I **No. 41622**—Adjustable puller jaw (4 incl.).
- J **No. 11622**—Cap screw, ½-13 x 1" lg. (4 incl.).
- K **No. 11623**—Cap screw, ½-13 x 1¼" lg. (4 incl.).
- L **No. 11624**—Cap screw, ½-13 x 1½" lg. (4 incl.).
- M **No. 34805**—Safety shield.

REMOVING BEARING
Axle and tooling set up on hydraulic press.

INSTALLING BEARING
Operation is performed with speed, ease and safety.



POSITIVE GRIP
Adjustable puller jaws grip bearing firmly.

SAFETY SHIELD

Bearing to be removed is covered with shield. Danger from possible flying bearing fragments is reduced.

Shield in place.

CHOOSE FROM OTC's LINE OF VERSATILE SHOP PRESSES

To provide the pressing force needed in rear axle bearing replacement—and for many other automotive service jobs—OTC offers a quality-built line of hydraulic forcing presses.

. . . see pages 38-42 of this catalog!

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

UNIVERSAL CLUTCH ALIGNING SET

- Fits eight pilot bearing sizes.
- Speeds clutch repair jobs.

Aligns single disc clutches of many popular makes of cars, trucks and tractors. Set includes seven accurately machined pilots, which together with the body of the tool, accommodate pilot bearings having internal bores of: .590, .612, .624, .668, .749, .786, .808 and .984 inches.

No. 7054—Universal clutch aligning set packaged in plastic box. Wt., 3 lbs.

No. 7054-A—Universal clutch aligning set in clear plastic storage pouch. Wt., 2¾ lbs.

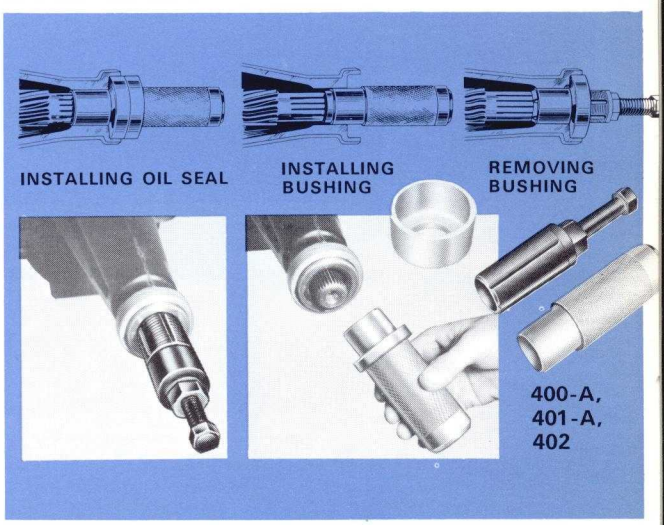
TRANSMISSION EXTENSION HOUSING BUSHING AND OIL SEAL PULLER SETS

For removing transmission bushing and oil seal, and installing these parts in exact position *without* disassembly of transmission.

No. 400-A—For 1½" I.D. bushings. Fits the following: '67 thru current Fords with C-4 transmission and '68 thru current Fords with FMX transmissions; Chrysler 904-series Torqueflite and AMC 904-series Torque-Command transmissions; GM cars with Powerglide and 300 and 350-series Turbo Hydra-Matic transmissions. Can also be used to install some Chevrolet rear axle grease seals.

No. 401-A—For 1 11/16" I.D. bushings. Fits the following: '67 thru current Ford C-6 transmissions and FX transmissions; Chrysler 727-series Torqueflite and AMC 727-series Torque-Command transmissions; GM 375 and 400-series Turbo Hydra-Matic transmissions.

No. 402—For 1⅜" I.D. bushings. Fits the following: Fairlane and Mustang with 6-cylinder engines; '60 thru '66 Falcon and Comet. Can also be used on many standard transmissions.



FRONT PUMP OIL SEAL REPLACER

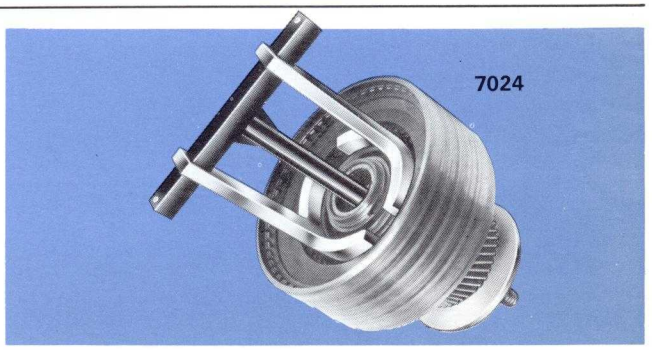
Services front pump oil seal on all Ford automatic transmissions. Front pump oil seal replacer installs seal in pump body over input shaft without removing front pump assembly.

No. 7011—Front pump oil seal replacer.

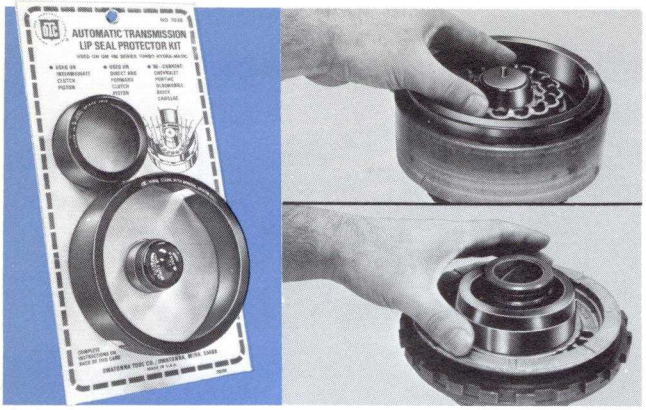
AUTOMATIC TRANSMISSION CLUTCH SPRING COMPRESSOR

For removing and installing the transmission rear clutch piston snap ring . . . adjustable, for most models of American cars and light trucks. Applies pressure to the retaining washer in the clutch drum to compress clutch piston return springs in order to remove or install snap ring during clutch repair or overhaul.

No. 7024—Clutch spring compressor.



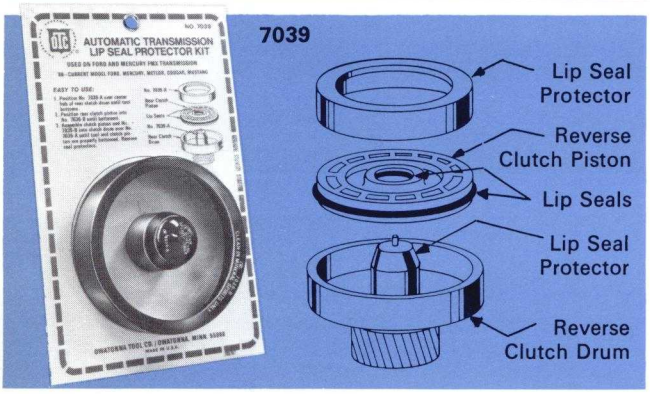
CLUTCH & TRANSMISSION TOOLS



AUTOMATIC TRANSMISSION LIP SEAL PROTECTOR KIT

An essential tool for clutch piston installation on GM 400 series Turbo Hydra-Matic transmissions, the OTC No. 7038 Automatic Transmission Lip Seal Protector Kit virtually eliminates any chance of cutting lip seals while installing the clutch piston into the clutch housing. For assembling forward, direct and intermediate clutch pistons on '66 thru current Chevrolet, Oldsmobile, Pontiac, Buick and Cadillac passenger cars. Three piece set is made of rugged plastic material which will not score or scratch clutch housing surfaces.

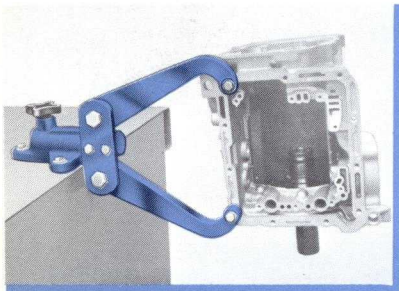
No. 7038—Automatic transmission lip seal protector kit. Wt., 6 oz.

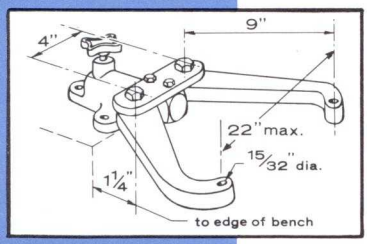


AUTOMATIC TRANSMISSION LIP SEAL PROTECTOR KIT

The No. 7039 Automatic Transmission Protector Kit compresses and protects lip seals from being cut when assembling both Ford and Mercury FMX automatic transmission reverse clutch pistons. Kit is designed for use on '68 thru current model Ford, Mercury, Meteor, Cougar and Mustang automobiles.

No. 7039—Automatic transmission lip seal protector kit. Shipping wt., 4 oz.





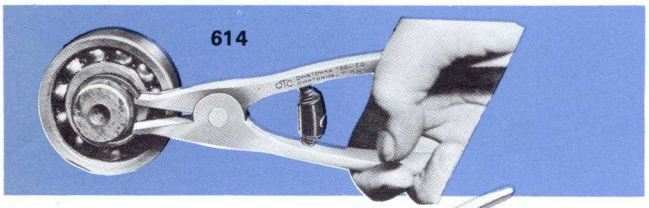
Components securely mounted may be rotated 360° for easy servicing.

BENCH MOUNTED HOLDING FIXTURE

- **Holds components of up to 250 lbs.**
- **Mounted unit may be rotated.**

Holds and positions small engines, transmissions, rear axle differentials and other components, leaving both hands free for work! When securely mounted to a work-bench with load properly positioned, any component weighing 250 lbs. or less may be safely rotated 360° with positive stops at 90° increments. Three sides of the mounted unit remain fully exposed for working convenience. Two movable arms attached to the rotating head can be removed when not in use.

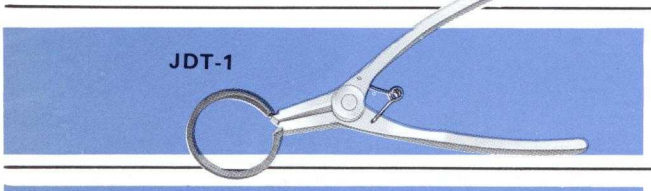
No. 7020—Bench fixture. Weight, 9½ lbs.



"GROOVE GRIP" SNAP RING PLIER

For quick, easy removal of external snap rings which locate bearings or gears on shafts. L-shaped groove on outside tips of nose permits positive gripping of ring. Maximum spread: 1 3/16".

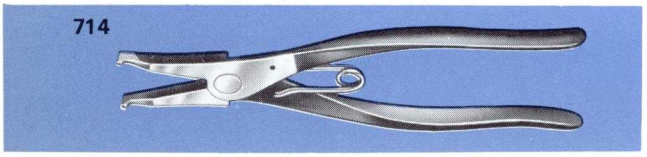
No. 614—"Groove Grip" snap ring plier, 8" long.



SNAP RING PLIER

Removes external snap rings used to locate bearings on shafts of transmissions, differentials, etc. Maximum spread: 1 7/16".

No. JDT-1—Snap ring plier, 7¾" long.



HORSESHOE LOCK RING PLIER

This ruggedly-built OTC plier is designed to spread and remove horseshoe lock rings used on hydraulic brakes, differentials and transmissions. 8" long; maximum spread of 1⅜".

No. 714—Horseshoe lock ring plier.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

RETAINING RING PLIERS/HEX KEY WRENCHES

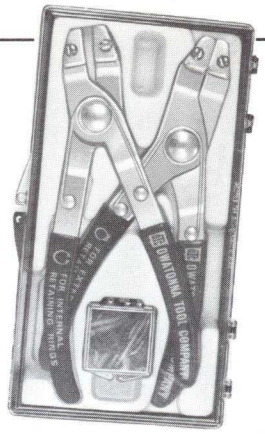
RETAINING RING PLIERS

- **Pliers for both internal and external rings.**
- **Interchangeable tips for wide range of application.**

OTC offers a wide variety of retaining ring pliers for both automotive and industrial applications. A handy kit, the 7053-K consists of one internal and one external retaining ring plier with four sizes of interchangeable tips to cover a wide range of ring sizes. The 7053-K contains four 90° tips (.035" dia.), four 45° tips (.045" dia.), and eight straight tips in .045" and .060" diameters. See chart below for OTC's complete plier line.

No. 7053-K—Retaining ring plier kit. Wt., 12 oz.

No. 15702—Replacement tip kit (contains 4 sets, 4 tips per set, plastic box).



7053-K

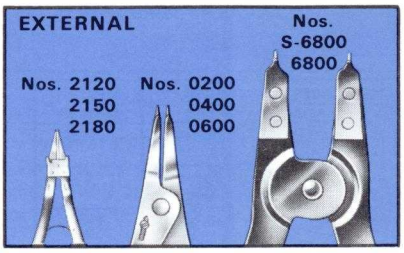
Ring Series No.	Size Range (Ring Size No.)	Bore or Shaft Dia. Range ("inch" equiv.)	OTC Plier No.
5100	12	1/8"	2120
	15	5/32"	2150
	18 thru 23	3/16" thru 15/64"	2180
	25 thru 87	1/4" thru 7/8"	1120 or 0200
	93 thru 143	15/16" thru 1 7/16"	1340 or 0400
	150 thru 350	1 1/2" thru 3 1/2"	0600
5101	354 thru 650	3 35/64" thru 6 1/2"	S-6800
5102	675 thru 1000	6 3/4" thru 10"	6800
5108	50 thru 100	1/2" thru 1"	1120 or 0200
	106 thru 200	1 1/16" thru 2"	1340 or 0400
	215 thru 334	2 1/8" thru 3 1 1/32"	0600
	350 thru 400	3 1/2" thru 4"	S-6800
N5000	25 and 31	1/4" and 5/16"	S-0100
N5001	37 thru 102	3/8" thru 1"	1120 or 0100
N5002	106 thru 175	1 1/16" thru 1 3/4"	1340 or 0300
	181 thru 300	1 1 3/16" thru 3"	0500
	306 thru 625	3 1/16" thru 6 1/4"	S-6700
	650 thru 700	6 1/2" thru 7"	6700
5008	75 thru 137	3/4" thru 1 3/8"	1120 or 0100
	143 thru 200	1 7/16" thru 2"	1340 or 0300
	206 thru 300	2 1/16" thru 3"	0500
	315 thru 400	3 5/32" thru 4"	S-6700

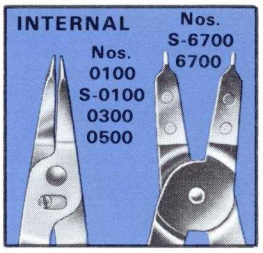
Three types: "internal" ring pliers for rings in a bore or housing; "external" pliers for rings on a shaft; "convertible" pliers with adjustable pivots for either internal or external rings. Replacement tips for giant sizes S-6700, S-6800, 6700 and 6800 are available—sold in pairs.

Fed. Spec.: GGG-P-00480-E

HOW TO SELECT THE PROPER PLIER:

1. If ring number is known, locate ring number in chart; plier is listed in right-hand column.
2. Or, measure diameter of shaft or bore and locate size in chart; plier number is in right-hand column.





METRIC HEX KEY WRENCHES

With so many imported cars and trucks on the roads today, and more small American cars using metric fasteners, every automotive repair shop, dealership and service station should have a complete set of metric hex key wrenches. The OTC No. MW-10-K Metric Hex Key Wrench Set contains 10 popular sizes, each made of durable, high quality steel with black rust-proof finish.

No. MW-10-K—Metric hex key wrench set with case. Wt., 9 oz.

OTC No.	Size (mm)	OTC No.	Size (mm)
MW-1	1.27	MW-6	4
MW-2	1.5	MW-7	5
MW-3	2	MW-8	6
MW-4	2.5	MW-9	8
MW-5	3	MW-10	10

MW-10-K

Kit contains ten popular metric sizes in roll-up vinyl case.

ALLEN TYPE SET SCREW WRENCHES

OTC No.	Size	Fits Set Screws	Fits HH Cap Screws	OTC No.	Size	Fits Set Screws	Fits HH Cap Screws
W-1	1/16"	6	—	W-10	5/16"	5/8"	3/8" & 7/16"
W-2	5/64"	8	—	W-12	3/8"	3/4"	1/2"
W-3	3/32"	10 & 12	—	W13-A	7/16"	—	—
W-4	1/8"	1/4"	8	W-16	1/2"	7/8"	5/8"
W-5	5/32"	5/16"	10	W-18	9/16"	1" & 1 1/8"	3/4"
W-6	3/16"	3/8"	1/4"	W-20	5/8"	1 1/4" & 1 3/8"	1"
W-7	7/32"	7/16"	5/16"	W-24	3/4"	1 1/2"	1 1/8" & 1 1/4"
W-8	1/4"	1/2"	3/8"	W-32	1"	1 3/4" & 2"	1 1/2"

No. W-14L—Plastic kit containing the following wrenches: W-1, W-2, W-3, W-4, W-5, W-6, W-7, W-8, W-10 and W-12.

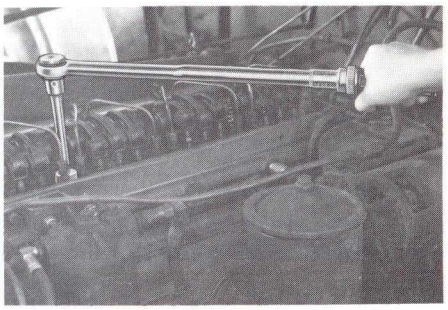
W-14L

Today's widespread use of socket head cap screws makes a set of these wrenches a mechanic's necessity.

TORQUE WRENCHES/SEALANT DISPENSER

New Dual Scale Tele-Torque®

TORQUE WRENCHES



- **Certified Accuracy through entire range of American Standard and Metric settings.**
- **Torque-limiting feature reduces human error!**

Automatically limits torque to the figure pre-set by the user with micrometer-type selector. A "click" is heard and felt when the desired torque is reached, and the handle moves freely for a few degrees. Wrench operates in both directions. Wrench may be cleaned in solvents, and subjected to reasonable abuse without loss of accuracy. Calibrations of wrench are large, easy to read. Wrench handle designed to give a sure, comfortable grip, even with greasy hands. Extra length means reduced effort for user. Smooth, highly-polished chrome plated finish.

RATCHET has 8-tooth engagement for extra strength. Only 8° handle travel needed. Works easily in close quarters!

PALM PAD provides safer, more secure operation . . . hand pressure on smooth top keeps socket and fastener firmly engaged!

SPINNER WHEEL for rapid run-down of a fastener having long thread travel before applying torque to fastener.

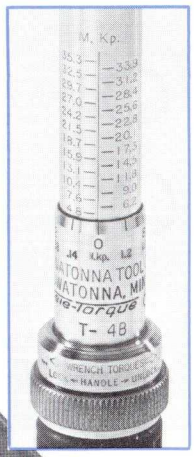
SENSORY RELEASE gives release "signal" that can be heard and felt when pre-set torque is reached!

HEAVY DUTY T-7 TORQUE WRENCH . . . Designed as a general all purpose utility tool, especially where extreme torque is required. Ideal for fleet operators and contractors for working on trucks, buses, tractors and cranes. NOTE: the No. T-7 is *not* dual scaled. American Standard scale only.

T-7

EASY-TO-READ SCALE

MAIN SCALE Am. Standard graduations are on front of shaft. THIMBLE graduations nearest beveled edge. MAIN SCALE Metric graduations on reverse side. THIMBLE graduations below American Standard graduations.



POSITIVE LOCK

Locking collar prevents accidental change of torque setting!

FEDERAL SPEC.: GGG-W-686c Type III, Class 1 (plain-head models) Class 2 (ratchet-head models)

ORDER INFORMATION

OTC No.	Torque Range	Graduations	Square Dr. Size	Head Type	Overall Length
T-1B	30-200 In. Lbs. 40.3-236.2 Cm./Kg.	1 In. Lb. 1.2 Cm./Kg.	¼"	Ratchet	9½"
T-2B	150-1000 In. Lbs. 201.6-1180.8 Cm./Kg.	5 In. Lb. 5.8 Cm./Kg.	⅜"	Ratchet	14¾"
T-3B	15-100 Ft. Lbs. 2.42-14.17 M./Kg.	½ Ft. Lb. .07 M./Kg.	⅜"	Ratchet	14¾"
T-4B	30-250 Ft. Lbs. 4.8-35.3 M./Kg.	1 Ft. Lb. .14 M./Kg.	½"	Ratchet	20½"
T-5A	30-250 Ft. Lbs. 4.8-35.3 M./Kg.	1 Ft. Lb. .14 M./Kg.	½"	Plain	20"
T-6B	100-600 Ft. Lbs. 15.6-84.7 M./Kg.	2½ Ft. Lb. .4 M./Kg.	¾"	Ratchet	39½"
T-7	400-2000 Ft. Lbs.	5 Ft. Lb.	1"	Plain	105"

7055

NEW

Uses standard 2 or 3 oz. collapsible tube of liquid gasket material. (Not included.)

SEALANT DISPENSER

- **Perfect seal every time!**
- **Cut preformed gasket inventory without cutting coverage!**

Today's highly stressed automotive components demand gaskets that are properly installed and applied. When used in conjunction with an "instant" gasket compound, the No. 7055 Sealant Dispenser delivers a seal that is simple and sure. This method eliminates virtually every gasketing problem and cuts down on material usage. Compact and lightweight, comes complete with 6-foot, ¼" nylon hose for easy hook-up to your existing shop air supply. Requires only 25 p.s.i. of air pressure to operate. These features combine to minimize assembly time and assure a lasting, trouble-free seal. Get in the habit of using the Sealant Dispenser almost anywhere gaskets are required . . . axle and valve covers, oil pans, intake manifolds, bearing plates, window gaskets and seals. Watch profits grow and service costs drop since one tube of sealant handles most all your gasketing needs—whether you're replacing a new, complex, preformed gasket or an old, discontinued style.

No. 7055—Sealant dispenser, complete with 6' nylon air hose, two spring guards and ¼" N.P.T. fitting. Weight, 10 oz.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

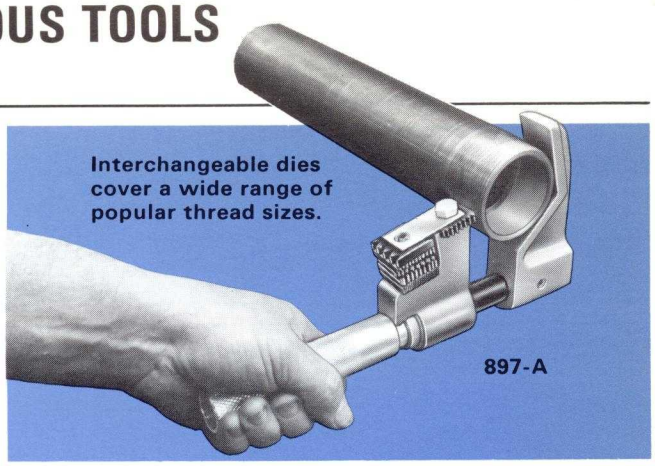
FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

HANDY MISCELLANEOUS TOOLS

UNIVERSAL OUTSIDE THREAD CHASER

A fast, sure way to restore damaged threads on shafts, housings, cages, etc. Interchangeable dies cover a large range of popular thread sizes. Precision dies restore threads to their original condition to make re-assembly of matching parts faster and easier. Eliminates the need for expensive thread-cutting equipment. Operation: Tighten the tool slightly on the good threads, then back off over the damaged thread area to restore the threads. The aluminum alloy V-pad will not damage the threads. V-pads and dies can be replaced when worn out. Capacity: from 1¼" to 5" O.D. Weight, 4½ lbs.

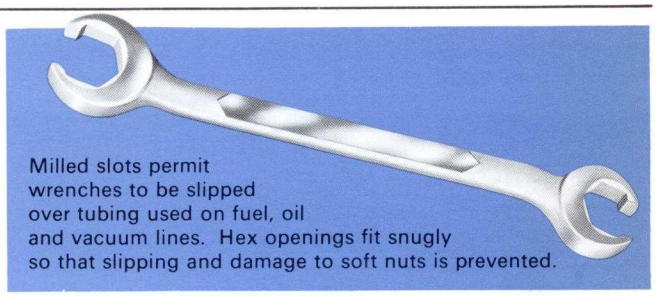
No. 897-A—Thread chaser, complete (with 6 dies: threads per inch—4, 5, 6, 7, 7½, 8, 9, 10, 11, 11½, 12, 14, 16, 18, 20 and 24).



FLARE NUT WRENCHES

OTC No.	Size Openings	Head Thickness	Slot Size	Length
CS-1214	3/8" x 7/16"	11/32"	3/16" x 1/4"	5½"
CS-1618	½" x 9/16"	3/8"	5/16" x 3/8"	6¾"
CS-2022	5/8" x 11/16"	½"	7/16" x ½"	7¾"
CS-2428	¾" x ⅞"	9/16"	9/16" x 11/16"	9"
CS-3236	1" x 1⅛"	5/8"	13/16" x 15/16"	10⅝"

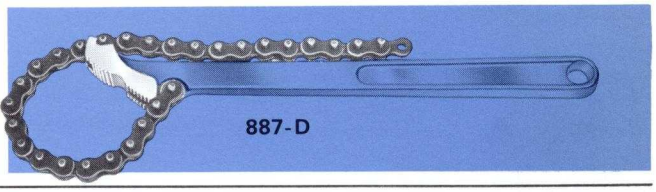
No. CS-3 —Set containing the following wrenches: CS-1214, CS-1618 and CS-2022.


Milled slots permit wrenches to be slipped over tubing used on fuel, oil and vacuum lines. Hex openings fit snugly so that slipping and damage to soft nuts is prevented.

RATCHETING CHAIN WRENCH

New head design permits turning in either direction without removing wrench from the work. Ratcheting action also makes it possible to re-grip without removal. Handles parts of most any shape . . . round, square, hexagon, octagon. An ideal pipe wrench.

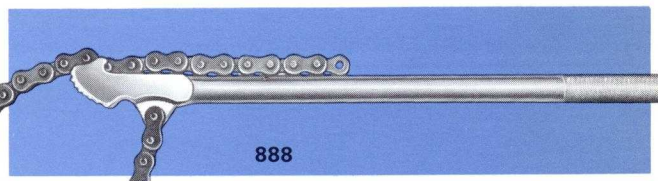
No. 887-D—Chain wrench, capacity ½" to 4¾" O.D.



LARGE RATCHETING CHAIN WRENCH

Chain is wrapped around part to be removed . . . wrench's chain attachment pin adjusts to either of two positions, for uniform contact of chain with surface of part being turned. Ratcheting action permits re-gripping without removing wrench from the work.

No. 888—Chain wrench, capacity 3" to 6¾" O.D.



HEAVY DUTY REVERSIBLE RATCHET

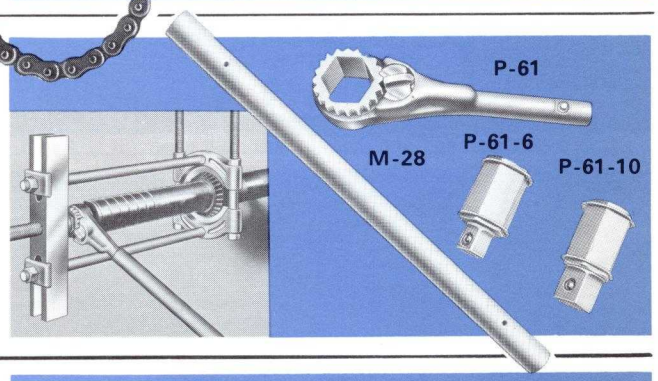
A truly *rugged*, dual-duty OTC tool . . . 1½" hex opening can be used to power certain OTC puller screws, as well as on other nuts of this size. Also used as a regular ¾" or 1" drive reversible ratchet, merely by adding adapter plugs. Open ratchet mechanism for ease in cleaning. Tubular handle provides necessary leverage. Wrench will withstand 1,350 ft. lbs. of torque.

No. P-61—Ratchet head (only).

No. P-61-6—Ratchet adapter, 1½" hex to ¾" sq. drive.

No. P-61-10—Ratchet adapter, 1½" hex to 1" sq. drive.

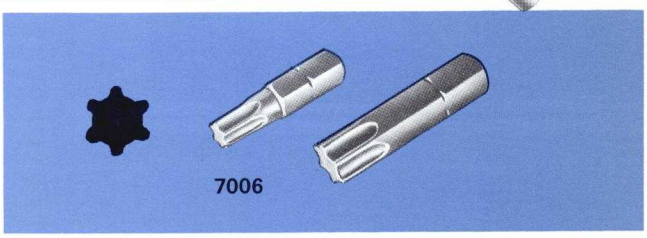
No. M-28—Tubular handle, 24" long.



SEAT BELT, DOOR STRIKER AND WINDSHIELD WIPER WRENCH KIT

Removes seat belt bolts and windshield wiper screws from '69 through current model Ford cars and adjusts door striker screws of late model G.M. and Ford Pinto cars. Set includes one 5/16" seat belt bolt and door striker bit and one 3/16" windshield wiper screw bit.

No. 7006—Seat belt, door striker and windshield wiper wrench kit.



SEAT BACK PIVOT BOLT BIT

Loosens and tightens the special head screws forming the seat back pivot on Ford Pinto.

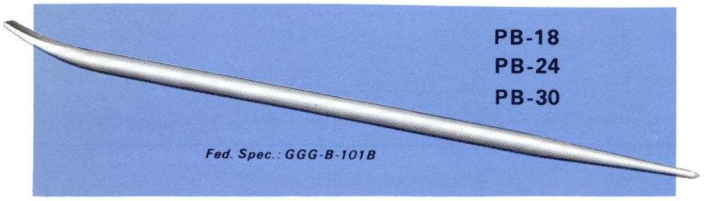
No. 7014—Seat back pivot bolt bit.

MISCELLANEOUS TOOLS/BUSHING DRIVER SETS

ROLLING HEAD PRY BARS

Rolling head makes a great deal of leverage possible. Long tapered body may be used as a lining-up drift.

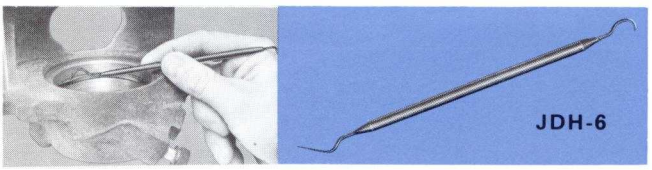
No. PB-43—Pry bar; 9/16" round, 16" long.
No. PB-45—Pry bar; 3/4" round, 18" long.



OTC JIMMY BARS

Forged from chrome alloy steel and heat-treated to resist bending and breaking.

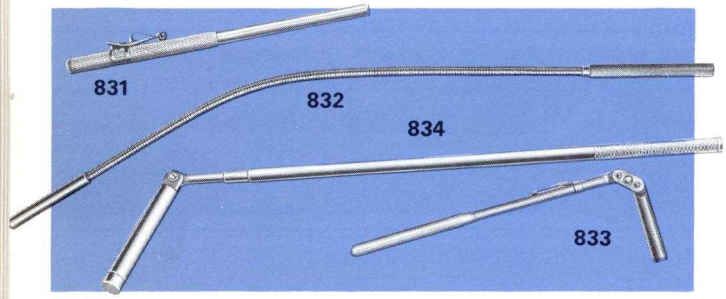
No. PB-18—Jimmy bar; 5/8" round, 18" long.
No. PB-24—Jimmy bar; 3/4" round, 24" long.
No. PB-30—Jimmy bar; 7/8" round, 30" long.



OIL SEAL AND "O" RING PICK

An extremely handy little tool! Makes removal and installation of oil seals and "O" rings a snap.

No. JDH-6—Oil seal and "O" ring pick.



MAGNETIC PICK-UP TOOLS

Have permanent magnetic heads for retrieving parts from otherwise inaccessible places.

No. 831—Pick-up tool with pocket clip. 6" long.
No. 832—Flexible shaft pick-up tool. 18" long.
No. 833—Hinged head pick-up tool. Shockproof . . . made of durable nylon. Has pocket clip. 8½" in length.
No. 834—Hinged head pick-up tool. Telescopes from 17" to 27" in length.

HOLLOW PUNCH SET

For cutting holes in gaskets, rubber hose, washers, etc. One mandrel fits seven sizes of punches: 1/4", 5/16", 3/8", 7/16", 1/2", 9/16" and 5/8". Not for cutting metal. In plastic box.

No. HP-7—Hollow punch set.

No. 818—Bushing driver set. Removes and installs bushings in automotive alternators, distributors, connecting rods and other components. Includes a complete range of driving collars and two mandrels, packed in plastic box. Contents of set:

Collar No.	Bushing I.D.	Bushing O.D.	Collar No.	Bushing I.D.	Bushing O.D.	Collar No.	Bushing I.D.	Bushing O.D.
26569	9/16"	5/8"	26588	13/16"	15/16"	26594	1 1/8"	1 1/4"
26572	5/8"	11/16"	26589	7/8"	1"	813	Driving Mandrel for 26569 to 26587	
26584	5/8"	3/4"	26590	7/8"	15/16"			
26585	11/16"	13/16"	26591	15/16"	1 1/16"	814	Driving Mandrel for 26588 to 26594	
26586	23/32"	27/32"	26592	1"	1 1/8"			
26587	3/4"	7/8"	26593	1 1/16"	1 3/16"	14701	Plastic Box	

No. T-818—Bushing driver set. A heavy-duty set designed for removing and installing bushings of trucks, tractors and other heavy equipment. Includes six driving collars and a driving mandrel, packed in plastic box. Contents of set:

Collar No.	Bushing I.D.	Bushing O.D.	Collar No.	Bushing I.D.	Bushing O.D.	No.	Description
T-806	1 3/16"	1 7/16"	T-809	1 3/8"	1 5/8"		
T-807	1 1/4"	1 1/2"	T-810	1 7/16"	1 11/16"	815	Driving Mandrel
T-808	1 5/16"	1 9/16"	T-811	1 1/2"	1 3/4"	14701	Plastic Box

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

No. 27810

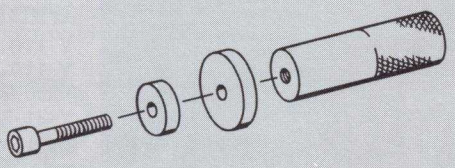
Tool organizer board. Keeps set components in proper order, safe from loss. Tools are not included.

Assemble your own "Custom-made" driver tools

- **Interchangeable discs and handles make hundreds of individual tool combinations possible.**
- **Eliminate the need for costly, one-of-a-kind drivers.**

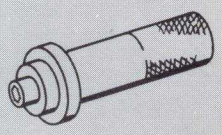
IT'S THIS EASY . . .

1. **Select the proper-size components.**



NOTE: All discs are ½" thick.

2. **Assemble your driver tool.**



3. **Perform the job easily!**

At your fingertips . . . the proper-size driver for any seal, bearing or bushing installing job. These sets include interchangeable discs and handles you assemble to provide a pilot (to prevent cocking), a spacer (so force will be applied only on the proper area) and a driver (providing even distribution of force). Discs range in size from ½" thru 4½" in diameter, in 1/16" increments. Select the set that best suits your needs . . . see listings below.

No. 27793

Choose this pre-selected automotive *"Starter set"* or one of the sets listed below . . .

THE "STARTER" SET . . . Contains handle and discs especially selected to provide the driver sizes most frequently needed in automotive service. Contained in handy plastic storage box. Maximum utility at a modest investment!

Contents of Set No. 27793:

10012—Cap screw.
10020—Cap screw.
10854—Cap screw.
10855—Cap screw.
12001—Cap screw.
14701—Plastic box.
27487—Small handle.
27493—Disc, 5/8" dia.
27495—Disc, 3/4" dia.
27497—Disc, 7/8" dia.
27499—Disc, 1" dia.
27501—Disc, 1 1/8" dia.
27503—Disc, 1 1/4" dia.
27505—Disc, 1 3/8" dia.
27507—Disc, 1 1/2" dia.
27509—Disc, 1 5/8" dia.
27511—Disc, 1 3/4" dia.
27513—Disc, 1 7/8" dia.
27515—Disc, 2" dia.
W-6 —Allen Wrench

"BASIC" SET NO. 27794 . . .
Wide coverage, low investment! Includes 41 discs and two handles. Size range: ½" thru 3" diameter.

"BIG JOB" SET NO. 27795 . . .
Used for servicing large components. You get coverage of 3 1/16" thru 4½" diameter with the 24 discs and handle provided.

"INTERMEDIATE" SET NO. 27796 . . .
An ideal automotive set. Includes a handle, plus 25 discs having a range of 2" thru 3½" diameter.

"MASTER" SET NO. 27797 . . .
For maximum coverage. Three handle sizes and all 65 discs listed in chart below are included: Range: ½" thru 4½" dia.

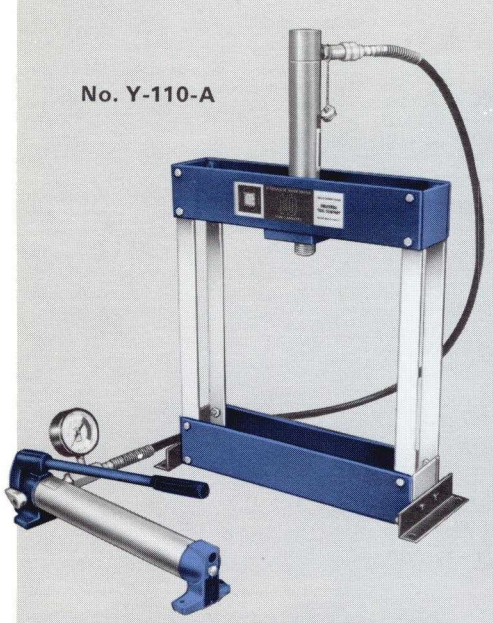
SET COMPONENTS ARE ALSO AVAILABLE SEPARATELY:

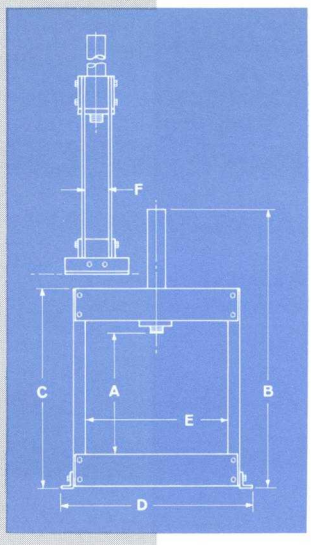
OTC No.	Description	OTC No.	Description	OTC No.	Description	OTC No.	Description	OTC No.	Description	OTC No.	Description
10012	1/4"-20 x 7/8" Soc. Hd. Cap Screw	27491	Disc, 1/2" dia.	27505	Disc, 1 3/8" dia.	27518	Disc, 2 3/16" dia.	27531	Disc, 3" dia.	27544	Disc, 3 13/16" dia.
		27492	Disc, 9/16" dia.	27506	Disc, 1 7/16" dia.	27519	Disc, 2 1/4" dia.	27532	Disc, 3 1/16" dia.	27545	Disc, 3 7/8" dia.
10020	1/4"-20 UNC x 1 1/4" Soc. Hd. Cap Screw	27493	Disc, 5/8" dia.	27507	Disc, 1 1/2" dia.	27520	Disc, 2 5/16" dia.	27533	Disc, 3 1/8" dia.	27546	Disc, 3 15/16" dia.
		27494	Disc, 11/16" dia.	27508	Disc, 1 9/16" dia.	27521	Disc, 2 3/8" dia.	27534	Disc, 3 3/16" dia.	27547	Disc, 4" dia.
10854	1/4"-20 UNC x 1 3/4" Soc. Hd. Cap Screw	27495	Disc, 3/4" dia.	27509	Disc, 1 5/8" dia.	27522	Disc, 2 7/16" dia.	27535	Disc, 3 1/4" dia.	27548	Disc, 4 1/16" dia.
		27496	Disc, 13/16" dia.	27510	Disc, 1 11/16" dia.	27523	Disc, 2 1/2" dia.	27536	Disc, 3 5/16" dia.	27549	Disc, 4 1/8" dia.
10855	1/4"-20 UNC x 2 3/4" Soc. Hd. Cap Screw	27497	Disc, 7/8" dia.	27511	Disc, 1 3/4" dia.	27524	Disc, 2 9/16" dia.	27537	Disc, 3 3/8" dia.	27550	Disc, 4 3/16" dia.
		27498	Disc, 15/16" dia.	27512	Disc, 1 13/16" dia.	27525	Disc, 2 5/8" dia.	27538	Disc, 3 7/16" dia.	27551	Disc, 4 1/4" dia.
12001	1/4"-20 UNC x 2 1/4" Soc. Hd. Cap Screw	27499	Disc, 1" dia.	27513	Disc, 1 7/8" dia.	27526	Disc, 2 11/16" dia.	27539	Disc, 3 1/2" dia.	27552	Disc, 4 5/16" dia.
		27500	Disc, 1 1/16" dia.	27514	Disc, 1 15/16" dia.	27527	Disc, 2 3/4" dia.	27540	Disc, 3 9/16" dia.	27553	Disc, 4 3/8" dia.
27487	Small Handle	27501	Disc, 1 1/8" dia.	27515	Disc, 2" dia.	27528	Disc, 2 13/16" dia.	27541	Disc, 3 5/8" dia.	27554	Disc, 4 7/16" dia.
27488	Medium Handle	27502	Disc, 1 3/16" dia.	27516	Disc, 2 1/16" dia.	27529	Disc, 2 7/8" dia.	27542	Disc, 3 11/16" dia.	27555	Disc, 4 1/2" dia.
27489	Large Handle	27503	Disc, 1 1/4" dia.	27517	Disc, 2 1/8" dia.	27530	Disc, 2 15/16" dia.	27543	Disc, 3 3/4" dia.	W-6	Allen Wrench
27490	Extension Tube	27504	Disc, 1 5/16" dia.								

HYDRAULIC SHOP FORCING PRESSES

10 TON BENCH PRESS

No. Y-110-A





See Page 40 For Ram Adapters.

- **Versatility every shop can use.**

Perfect for pressing jobs required in the repair of small motors, armatures, alternators . . . makes an ideal piston pin press. 4-post design allows easy access through the uprights. Ram and pump are removable for other uses. 14½" x 18" working area. 10" ram piston travel.

ORDERING INFORMATION

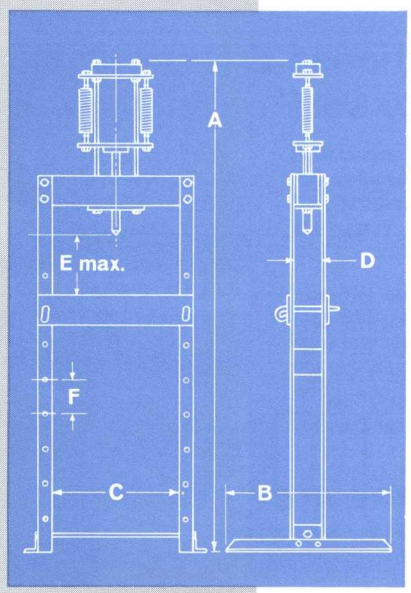
Y-110 . . . . . Press frame only. Wt., 56 lbs.
Y-110-A . . . . . Press, complete with hydraulics. Includes: Y-21-1 Pump, Y-1-A Gauge, Y-1-B Tee, Y-21-2 Hose, Y-25-3 Hose Half Coupler, YS-107-A Ram. Wt. 70 lbs.

DIMENSIONS

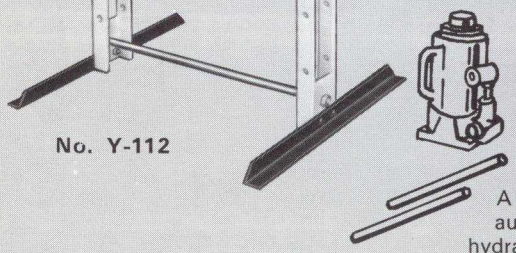
A	B	C	D	E	F	Bench Space
14½"	35"	25"	24"	18"	3"	8" x 24"

12 TON "JACK" PRESS

(Hydraulic jack is not included.)



No. Y-112



A common automotive hydraulic jack provides power

- **Uses common automotive hydraulic jack for power.**
- **Adjustable press bed means you can use this press in many ways.**

A common 5, 8 or 12 ton automotive hydraulic jack is the power source for this new OTC floor press. Low in cost, this ruggedly-built unit is ideal for service stations, machine and farm implement shops. The 4-post design enables long bars or shafts to be placed between the uprights for bending or straightening. Also perfect for removing and installing stubborn rear axle bearings and other friction-fitted parts. Press bed height is adjustable. Hydraulic jack (not included) remains easily removable for other uses.

ORDERING INFORMATION

No. Y-112—Floor press frame only (jack is not included). Wt., 132 lbs.

DIMENSIONS

A	B	C	D	E	F	Floor Space
71"	24"	21"	3"	39"	5"	24" x 27"

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

HYDRAULIC SHOP FORCING PRESSES

the popular POWER-TWIN®

17½-TON SHOP PRESSES

- Sturdy 4-post frame construction.
- Quick-action bed lifting mechanism.

Perfect for a multitude of automotive jobs . . . pressing rear axle bearings, piston pins, brake drum studs and other press-fit parts. Ram head is easily moved from side to side for off-center pressing jobs. Ram-to-work distance is quickly adjusted by forcing screw, which is extended or retracted with the handy speed crank. Four-post design features heavy steel bars, conveniently spaced for side-entry of rod or bar stock for straightening or bending. Ram piston travel, 2". Screw adjustment in head, 10".

REMOVABLE HYDRAULICS

"Power Twin" ram and pump on your OTC press are easily removed for use on engine cylinder sleeve pullers and other types of hydraulically powered equipment.

ORDERING INFORMATION

No. Y-106-B—17½-ton conventional press, frame only. Includes brackets for mounting hand pump. Does not have bed lifting mechanism. Wt., 179 lbs.

No. Y-106-BA—Same as Y-106-B but comes complete with Y-21-1 hydraulic hand pump, gauge, tee, hose, hose half coupler, Y-15-A ram, adjusting screw, adjusting crank. Does not have bed lifting mechanism. Wt., 226 lbs.

No. Y-109-B—17½-ton "Open Throat" press, frame only. Includes brackets for mounting hand pump and chain-driven lifting mechanism. Wt., 210 lbs.

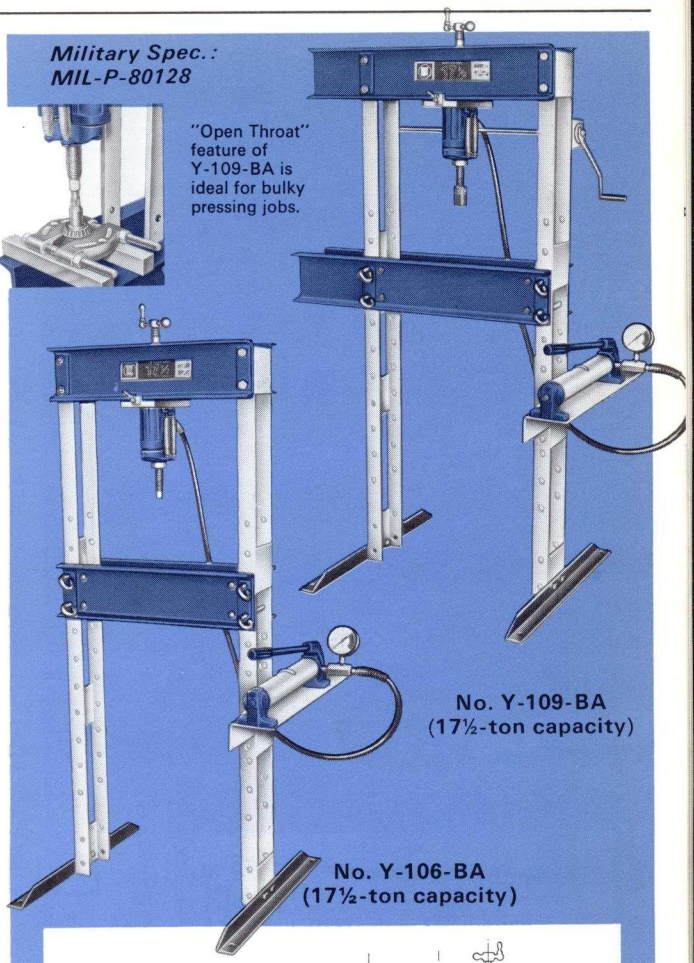
No. Y-109-BA—Same as Y-109-B but comes complete with Y-21-1 hydraulic hand pump, gauge, tee, hose, hose half coupler, Y-15-A ram, adjusting screw, adjusting crank. Wt., 262 lbs.

DIMENSIONS

	A	B	C	D	E	F	G	H	Floor Space
Y-106-B	64"	28"	20"	5"	34⅞"	18"	—	3⅜"	28" x 28"
Y-109-B	64"	28"	20"	5"	34⅞"	18"	4⅜"	3⅜"	28" x 28"

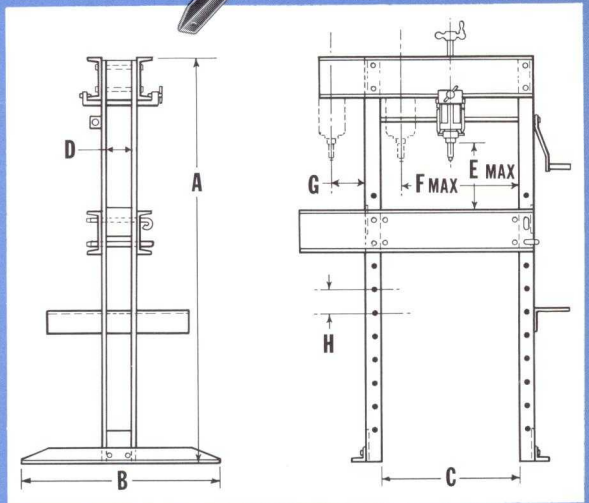
Military Spec.: MIL-P-80128

"Open Throat" feature of Y-109-BA is ideal for bulky pressing jobs.



No. Y-109-BA (17½-ton capacity)

No. Y-106-BA (17½-ton capacity)

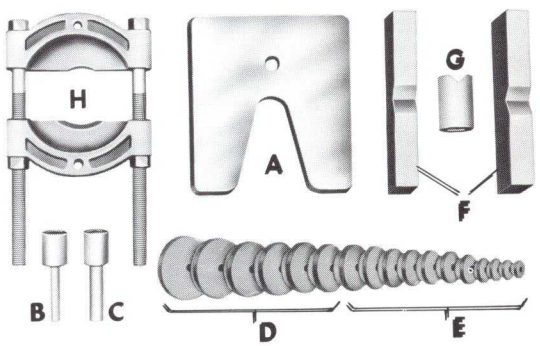


17½-TON PRESS ACCESSORIES

No. Y-80—Press accessory group for OTC 17½-ton press.

Contents of No. Y-80 Set

- A. **Y-34-3** . . . V-throat press plate.
- B. **938-14** . . . Ram pushing adapter with ½" dia. shank.
- C. **938-15** . . . Ram pushing adapter with ¾" dia. shank.
- D. **630-T** . . . . Step plate adapter set.
- E. **630-S** . . . . Step plate adapter set.
- F. **Y-79** . . . . . Pair of V-blocks.
- G. **Y-79-1** . . . V-pushing adapter.
- H. **952-A** . . . . Bearing pulling attachment.



RAM CAP FOR 17½-TON PRESSES

No. Y-79-2—Ram cap. Fits forcing screw of 17½-ton capacity press. Standard on Y-106-BA and Y-109-BA presses.

HYDRAULIC SHOP FORCING PRESSES

No. Y-125-A
(25-ton capacity)

the new general purpose
25-TON SHOP PRESS

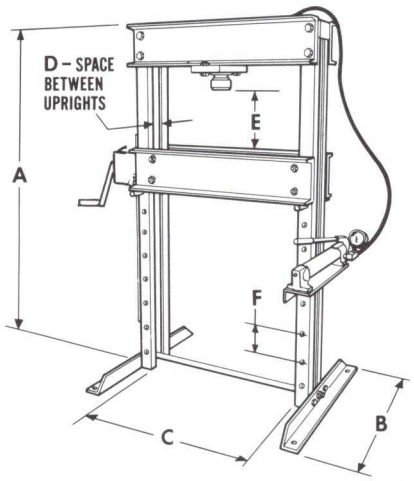
- A reasonably priced, yet rugged unit.
- With manual or air-driven hydraulic pump.

An amazing value . . . a powerful, sturdily-built hydraulic press at a surprisingly low price. It's the answer for the shop owner who's faced with a tight budget, yet demands quality and safety in a press. Large 30" x 44½" working area under the ram makes positioning of even bulky work easy. The spring-return ram has a full 5" stroke . . . perfect for rear axle bearing work, piston pins and many other frequently-performed automotive pressing jobs. Press has a rugged channel steel frame—resists buckling and bending, even under maximum loading. Press bed is rapidly raised and lowered by a dependable lifting mechanism. Offered with air-driven or manual pump . . . both have pressure gauge.

OTHER PUMPS AVAILABLE

Manpower is expensive—order your new press equipped with one of OTC's air-driven or electric pumps and your pressing jobs will get done faster, cutting labor costs. The Y-13, pictured left, operates on 40-120 p.s.i. shop air. Foot operation and remote control are both available. 80 cu. in. reservoir.

SEE PAGE 63 FOR OTHER PUMPS!



No. Y-80-R Press Accessory Set

ORDERING INFORMATION

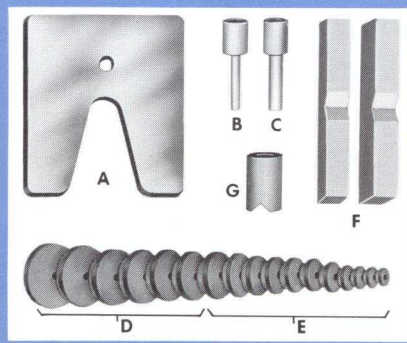
No. Y-125-A—25-ton press, complete with Y-21-1 hydraulic hand pump, gauge, tee, hose, hose half coupler, ram and ram cap. Shipping wt., 441 lbs.

No. Y-125-B—25-ton press, complete with air-driven Y-13 hydraulic pump, gauge, tee, hose, hose half coupler, ram and ram cap. Shipping wt., 440 lbs.

DIMENSIONS

A	B	C	D	E	F	Floor Space
69½"	36"	30"	3¼"	4¼"-44½"	5"	41½" x 32"

No. 34551
Ram Cap
Adapter



25-TON PRESS ACCESSORIES

No. Y-80-R—Press accessory group. Having a 30-ton capacity, these accessories are ideal for use with above presses. To use the pushing adapters, however, the No. 34551 Ram Cap Adapter is also required . . . see listing below.

Contents of No. Y-80-R Set

- **A. Y-306** . . . V-throat press plate.
- **B. 939-14** . . . Ram pushing adapter with ¾" dia. shank.
- **C. 939-15** . . . Ram pushing adapter with 1" dia. shank.
- **D. 630-T** . . . . . Step plate adapter set.
- **E. 630-S** . . . . . Step plate adapter set.
- **F. Y-379** . . . . . Pair of V-blocks.
- **G. Y-379-1** . . . V-pushing adapter.

SPECIAL RAM CAP ADAPTER

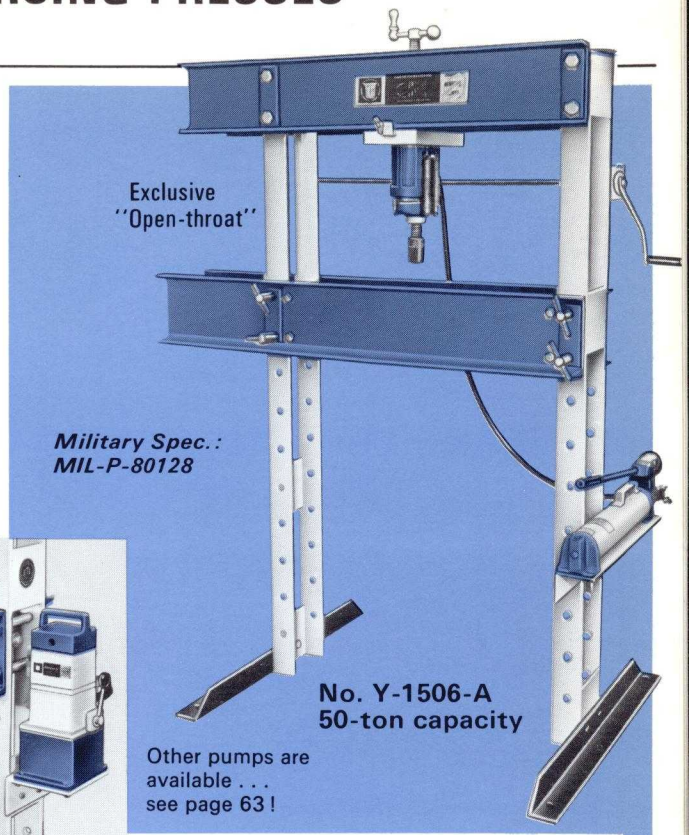
No. 34551—Adapter. Used in place of the standard ram cap on the above presses. Permits the use of pushing adapters supplied with the No. Y-80-R accessory set.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

HYDRAULIC SHOP FORCING PRESSES

heavy-duty POWER-TWIN®

30 and 50-TON capacity "OPEN-THROAT" presses



These "big-job" presses combine power with superior features to handle stubborn part removal and installation jobs, perform bending and straightening operations. The "Open-throat" extensions enable you to mount the ram outside of the press frame . . . to service bulky components. The press bed is raised or lowered with a few easy turns of the hand crank. Ram-to-work distance is adjusted in seconds by rotating speed crank of forcing screw. The ram head is laterally adjustable for off-center pressing. Ram and pump of your press are detachable for use with other hydraulically-powered equipment.

ORDERING INFORMATION

No. Y-330-B—30-ton press frame only with bracket for mounting hydraulic hand pump. Wt., 478 lbs.

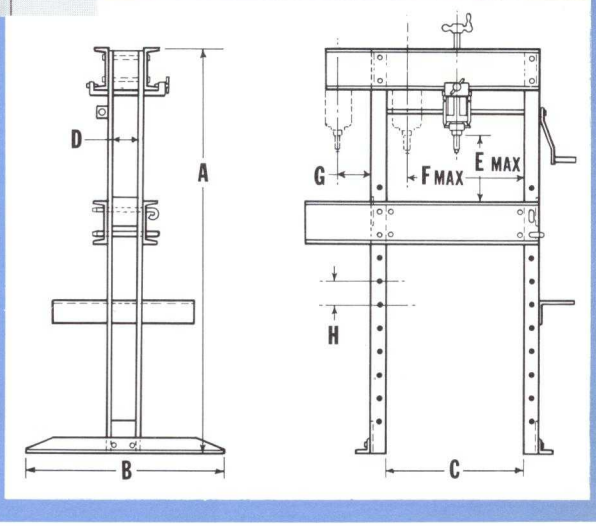
No. Y-330-BA—30-ton press, complete with Y-22-1 hydraulic hand pump, gauge, hose, hose half coupler, ram, adjusting screw, adjusting crank. Wt., 538 lbs.

No. Y-330-BV—Same as Y-330-BA except has Y27AO-1-A-O-O electrically-driven "Vanguard Jr." hydraulic pump with Y-5-B gauge. Wt., 540 lbs.

No. Y-1506—50-ton press frame only with bracket for mounting hydraulic hand pump. Wt., 802 lbs.

No. Y-1506-A—50-ton press, complete with Y-22-1 hydraulic hand pump, gauge, hose, hose half coupler, ram, adjusting screw and adjusting crank. Wt., 914 lbs.

No. Y-1506-AV—50-ton press, complete with electrically-driven Y-27 series hydraulic pump, gauge, hose, hose half coupler, ram, adjusting screw and adjusting crank. Wt., 916 lbs.



DIMENSIONS

	A	B	C	D	E	F	G	H	Floor Space
30-TON	68″	32″	32″	5½″	35 15/16″	29½″	7″	4½″	32″ x 43″
50-TON	72″	36″	36″	6¾″	34 9/16″	33″	7″	6″	36″ x 48½″

ACCESSORIES FOR 30-TON AND 50-TON OTC PRESSES

30-TON ACCESSORY SET

No. Y-80-R—Press accessory group . . . illustrated on page 40. Adds versatility to your 30-ton shop forcing press.

Contents of No. Y-80-R Set:

- A. **Y-306** . . . V-throat press plate.
- B. **939-14** . . . Ram pushing adapter with ¾″ dia. shank.
- C. **939-15** . . . Ram pushing adapter with 1″ dia. shank.
- D. **630-T** . . . . . Step plate adapter set.
- E. **630-S** . . . . Step plate adapter set.
- F. **Y-379** . . . . Pair of V-blocks.
- G. **Y-379-1** . . . V-pushing adapter.

NOTE: This set does not include bearing pulling attachment!

50-TON ACCESSORY SET

No. Y-80-S—Press accessory group . . . illustrated on page 40. Increased utility for 50-ton capacity OTC presses!

Contents of No. Y-80-S Set:

- A. **Y-306** . . . V-throat press plate.
- B. **939½-14** . Ram pushing adapter with 1″ dia. shank.
- C. **939½-15** . Ram pushing adapter with 1¼″ dia. shank.
- D. **630-T** . . . . Step plate adapter set.
- E. **630-S** . . . . Step plate adapter set.
- F. **Y-379** . . . . Pair of V-blocks.
- G. **Y-579-1** . . . V-pushing adapter.

NOTE: This set does not include bearing pulling attachment!

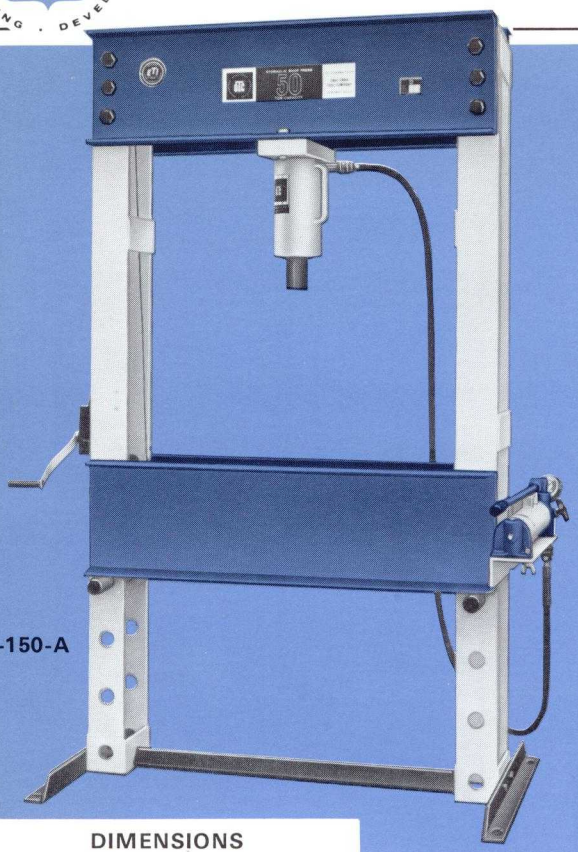
RAM CAP FOR 30-TON PRESS

No. Y-379-2—Ram cap. Fits forcing screw of 30-ton press. One of these ram caps is supplied as standard equipment on the Y-330-series presses. Illustrated on page 40.

RAM CAP FOR 50-TON PRESS

No. Y-579-2—Ram cap. Fits forcing screw of 50-ton presses. One of these ram caps is supplied as standard equipment on Y-1506 series presses. Illustrated on page 40.

HYDRAULIC SHOP FORCING PRESSES



Y-150-A

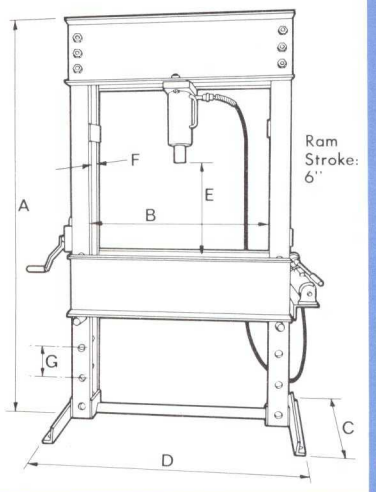
the new heavy-duty

50 TON SHOP PRESS

- Perfect for heavy-duty equipment repair.
- Rugged construction guarantees years of reliable service.
- Two-speed hydraulic pump provides maximum work efficiency.

Here's a ruggedly-built press that delivers high performance at a surprisingly low price. It's the practical solution for the shop whose budget is limited but whose work load isn't. Featuring a durable steel frame that resists buckling and bending, this is an ideal press for use by truck and implement dealers, bus and fleet repair shops, highway department shops, or other facilities where heavy equipment and machines are repaired. A two-speed hydraulic hand pump provides rapid ram approach and automatically shifts to a high pressure-low volume stage to handle high force needs. There's no need to manually shift pump speeds. For added versatility, you can quickly remove the hydraulic pump from the press and put it to work with other hydraulically-operated equipment such as gear and bearing pullers. A hand operated winch and cable mechanism provides fast and trouble-free operation in lifting and lowering the adjustable bolster. Ram delivers full 6" stroke.

DIMENSIONS



Other pumps are available . . . see page 63!

OPTIONAL HYDRAULICS

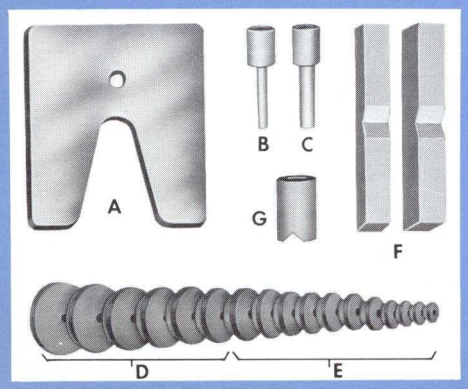
Your OTC shop press can be equipped with one of OTC's air-driven or electric pumps. You'll find that the optional pumps enable you to perform many pressing jobs faster, cutting labor costs. The Y-27 "Vanguard Jr." electrically-driven power unit, at left, gives you the power needed at the touch of a button.

ORDERING INFORMATION

No. Y-150-A—50-ton capacity press, complete with Y-22-3 hydraulic hand pump, gauge, hose, hose half coupler, ram and ram cap. Shipping wt., 693 lbs.

DIMENSIONS

A	B	C	D	E	F	G
78¼"	35"	32"	47½"	6"-36"	7⅛"	6"



GET MAXIMUM USE FROM YOUR PRESS WITH THIS ACCESSORY SET

Avoid those unsafe, makeshift pressing set-ups with these handy OTC accessories. Make your 50 ton press an even more versatile piece of shop equipment!

No. Y-80-S—Accessory set. Shipping wt., 137 lbs.

CONTENTS OF NO. Y-80-S SET

- A. **Y-306**. . . . V-throat press plate.
- B. **939½-14**. . Ram pushing adapter with 1" dia. shank.
- C. **939½-15**. . Ram pushing adapter with 1¼" dia. shank.
- D. **630-T**. . . . Step-plate adapter set.
- E. **630-S**. . . . Step-plate adapter set.
- F. **Y-379**. . . . Pair of V-blocks.
- G. **Y-579-1**. . V-pushing adapter.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

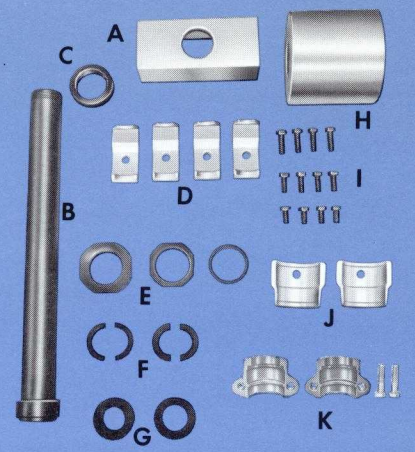
REAR AXLE *BEARING* PULLER/INSTALLER SET

- **Universal tools remove, install bearings of a wide variety of makes and models.**
- **Designed for use with a hydraulic shop forcing press.**

Do you presently have to depend on an outside source to handle your rear axle bearing pressing jobs? Now you can keep this *profitable* work in your own shop . . . to save money, to save time! The tools of this universal set, used with a hydraulic press of at least 17½-ton capacity, remove and install bearings of flange-type axles or tapered roller axle bearings on General Motors, Ford, Chrysler, American Motors and some foreign cars . . . plus light trucks. Best of all, the tools will *not* become obsolete as new vehicles are introduced . . . the adjustable puller jaws adapt to a wide range of sizes. You invest once and once only!

Broken bearings present no problem . . . special adapters are provided for removing the inner race. Safety was also a prime consideration when this set was designed. The tooling withstands up to 20 tons of force, and includes a special safety shield which, when placed over the bearing when force is applied, offers protection to the operator from possible flying bearing fragments.

No. 7026—Rear axle bearing service set. Wt., 40 lbs.



Set includes:

A—Press plate.
B—Pulling tube.
C—Tube nut.
D—Adjustable puller jaws.
E—Guide rings.
F—Inner race adapter rings.
G—Driving collars.
H—Safety shield.
I—Cap screws.
J—Chevrolet puller jaws.
K—Chrysler puller jaws.

INSTALLING

REMOVING

Safety shield in place.

BRAKE DRUM RIVETING SET

- **Your press and precision tooling do the job!**

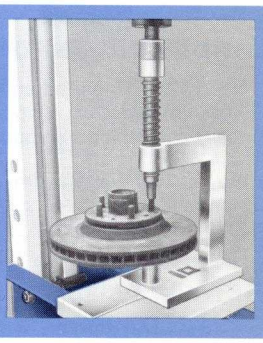
Handles stud removal and replacement. Studs are easily pressed out of the drum-hub, new studs are inserted and peened securely. The necessary punches and anvils are supplied with set. Both fixture frame and tooling feature heavy alloy steel construction. Used with shop presses of 17½-ton and larger capacity.

No. Y-2100-A—Riveting fixture set. Wt., 37 lbs.

Contents of Set:

OTC No.	Description
40323	Fixture frame
22163	Installing adapter
22164	Installing adapter
22165	Installing adapter
22175	Installing adapter
22137	Removing adapter
22167	Removing adapter
22168	Removing adapter
W-3	3/32" set screw wrench

Fixture also services disc brake rotors.



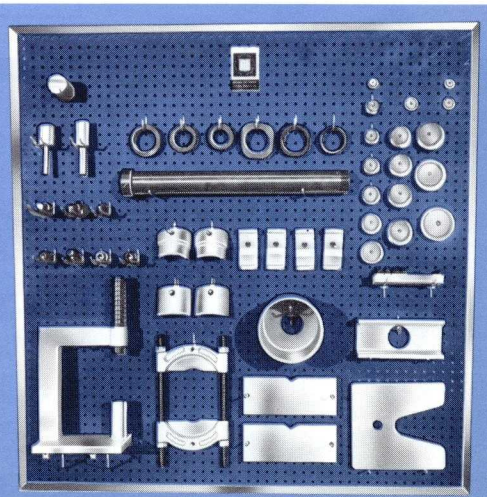
17½-TON PRESS ACCESSORY SET

This "master" set lets your OTC 17½-ton press handle just about any pressing job you'll encounter. It's actually *three* sets in one. You get OTC's No. Y-80 Press Accessory Group, No. 7026 Rear Axle Bearing Service Set and No. Y-2100-A Brake Drum Riveting Fixture Set. To keep all components together, safe from loss and instantly accessible, a handy storage panel is also included. Get the utmost in utility from your press by having the right accessories . . . order this set today!

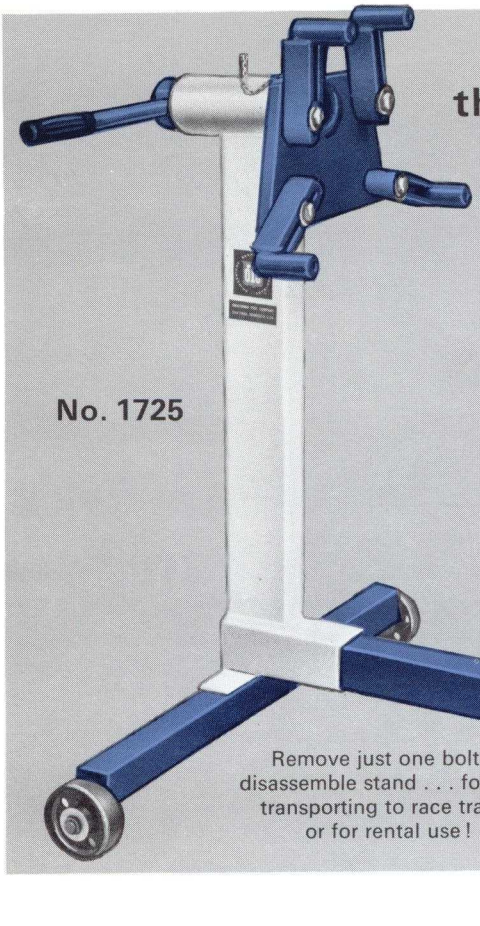
Contents of Set No. 29685

No. Y-80—Press accessory group (described on page 39).
No. 7026—Rear axle bearing service set (described above).
No. Y-2100-A—Brake drum riveting set (described above).
No. 29685-B—Tool storage panel (shown at right).

No. 29685—Accessory set with storage panel. Wt., 154 lbs.
No. 29685-B—Tool storage panel only. Wt., 20 lbs.



REPAIR AND OVERHAUL STANDS



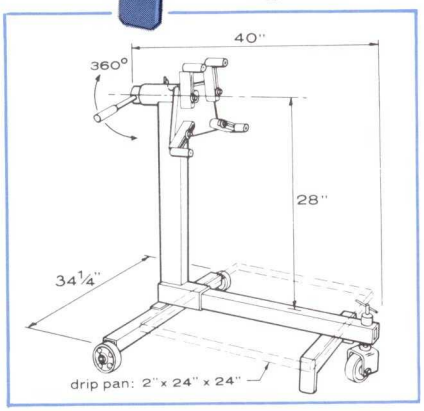
the new universal
ENGINE STANDS

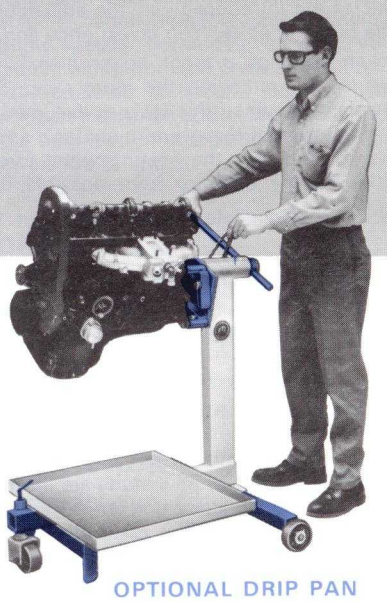
No. 1725

- **1,000 lb. capacity . . . ideal for car and light truck engines.**
- **Rotates engine a full 360°, locks securely in position.**
- **Solidly built . . . highest quality, yet low in price!**

Overhaul and repair of engines can be performed with money-making speed when the unit is conveniently held and positioned at workbench height. Easily adjustable attachment arms of this new, low-cost stand make mounting a fast and easy operation; special adapters are not needed! An engine is rotated for work on the "bottom end" with an easy turn of the handle. Locking pin secures work in any of eight positions. Smooth-rolling wheels and swivel caster provide ease of mobility. Stand is lowered onto front supports, solidly anchored in working position, by raising the caster. A drip pan is offered as a convenient accessory.

Remove just one bolt to disassemble stand . . . for easy transporting to race tracks or for rental use!





OPTIONAL DRIP PAN

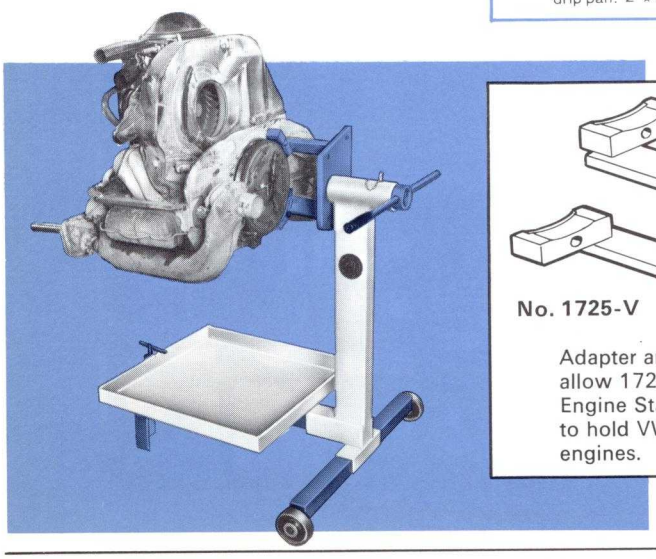
To catch oil drippings from mounted engines, an optional No. 1725-P drip pan is available as an accessory.

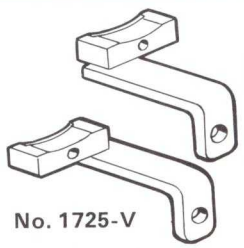
ORDERING INFORMATION

No. 1725—Universal engine stand. 1,000 lb. capacity. Shipped knocked down; easily assembled. Shipping wt., 104 lbs.

No. 1725-P—Metal drip pan for above stand. Measures 24" x 24" x 2" deep. Shipping wt., 9 lbs.

Capacity: 1,000 lbs. with load center of gravity within 18" of mounting plate face.





No. 1725-V

Adapter arms allow 1725 Engine Stand to hold VW engines.

ADAPTER KIT FOR MOUNTING VOLKSWAGEN ENGINES

Now you can quickly and easily overhaul and repair Volkswagen and 4-cylinder Porsche engines by mounting them on the OTC No. 1725 Engine Stand with the No. 1725-V Volkswagen Adapter accessory. The 1725-V consists of a pair of attachment arms, which you bolt to the engine stand, that clear the raised ring on the bell housing of VW and 4-cylinder Porsche engines and fit firmly to the bell housing. You get a stable holding system.

ORDERING INFORMATION

No. 1725-V—Volkswagen adapter arms to convert standard OTC No. 1725 Engine Stand into a specialized VW and 4-cylinder Porsche engine stand. Wt., 7 lbs.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

the heavy-duty REPAIR STAND

Motor-rotor®

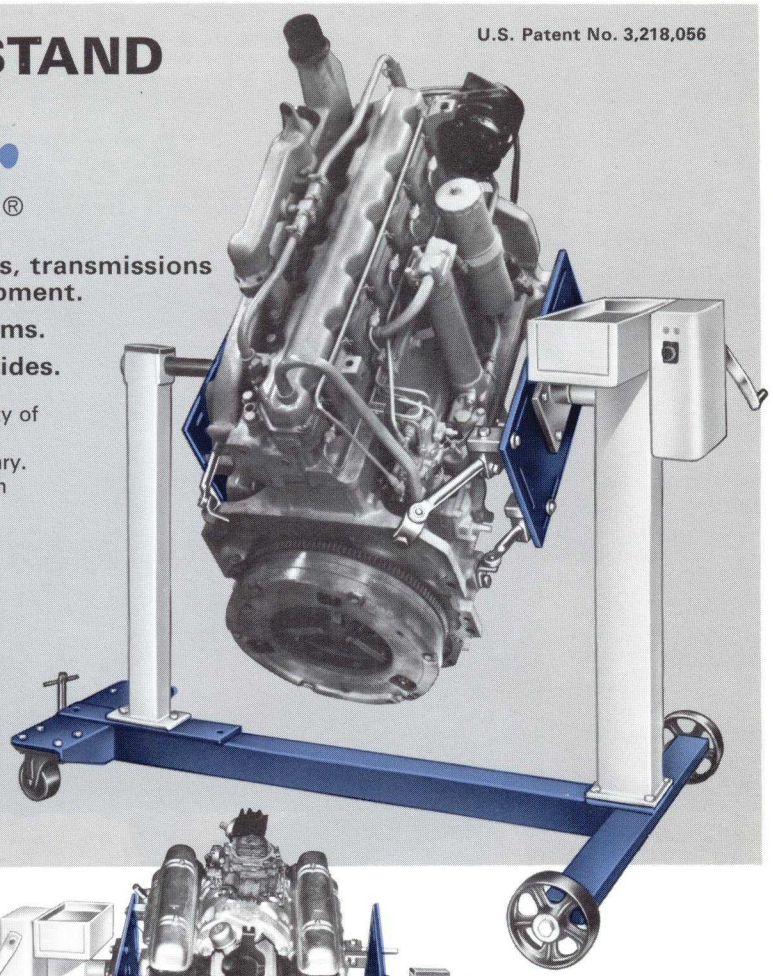
U.S. Patent No. 3,218,056

- Has 2,000 lb. capacity . . . handles engines, transmissions of trucks, tractors and construction equipment.
- Features unique universal mounting arms.
- Supports mounted unit from both sides.

"AdjustaGrip" arms enable you to mount an endless variety of engines, transmissions, torque converters, rear axles and other components, without special adapters being necessary. Component is solidly cradled in the stand—supported from both sides—just as it is in the vehicle. Twin-post design, featuring laterally-adjustable outboard support, provides an extremely stable work-holding unit. Gearbox allows full rotation of mounted unit for service, with just a turn of the crank . . . locks safely in position.

And because the stand is mounted on wheels and casters, it can be easily maneuvered from storage to the work area. Screw-type floor brake anchors the stand at the desired work locations. A handy built-in tool tray is also featured.

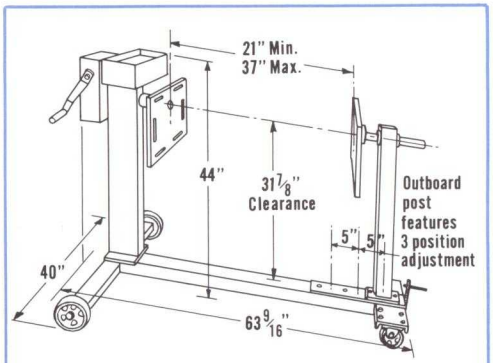
Military Spec.: MIL-S-45004-D



Torque converter on stand.

MOUNT THEM ALL—THE RIGHT WAY . . .

ENGINES
TRANSMISSIONS
TORQUE CONVERTERS
REAR AXLES



NOTE: When loads of over 1000 lbs. are to be mounted, it is recommended that more than four "AdjustaGrip" arms be used!

"AdjustaGrip"® MOUNTING ARMS

Each arm has five points of adjustment, permitting its attachment to the normal mounting holes of the component . . . whatever their location!

Whether you're mounting a big V-8, an opposed-type engine, a foreign engine or a large truck transmission, your "Motor-rotor" can handle it. You won't have to invest in costly, seldom-used adapter plates to handle unusual engines!

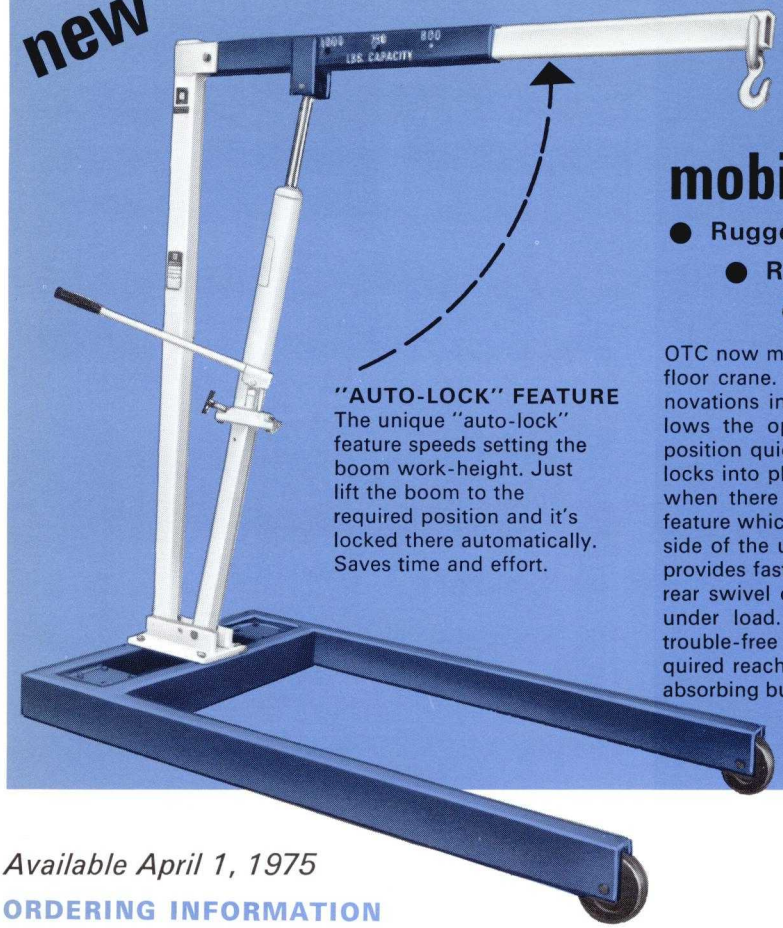
ORDERING INFORMATION

No. 1730-B —Repair stand. Includes four No. 1718 "AdjustaGrip" universal mounting arms. Shipping wt., 340 lbs.

No. 1718—"AdjustaGrip" arm (one only). Includes two attaching brackets: one for ½" dia. cap screws, one for ¾" dia. cap screws. Wt., 4½ lbs.

MOBILE LIFTING CRANE

new



1,000 LB. CAPACITY mobile floor crane

- Ruggedly-built for lasting service
- Reliable hydraulic jacking power
- Unique "auto-lock" boom positioning

"AUTO-LOCK" FEATURE
The unique "auto-lock" feature speeds setting the boom work-height. Just lift the boom to the required position and it's locked there automatically. Saves time and effort.

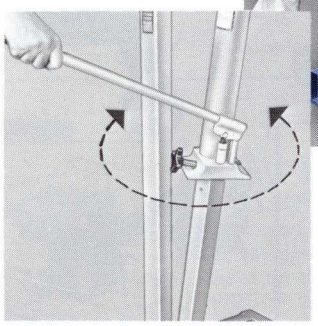
OTC now makes available a revolutionary half-ton capacity mobile floor crane. The No. 1807 1,000 lb. capacity crane has many innovations including "auto-lock" positioning—a system which allows the operator to raise the lifting boom by hand into any position quickly without having to use the hydraulic pump. Boom locks into place automatically, hydraulically. Saves time and effort when there is no load. This crane also includes a swivel pump feature which enables the operator to operate the pump from either side of the unit for convenience. Reliable hydraulic jacking power provides fast engine removal and replacement. Also features large, rear swivel casters for smooth positioning and transporting while under load. Rugged tubular steel construction will give long, trouble-free service. Telescopic boom extension provides the required reach to pull engines from vehicles with protruding energy absorbing bumpers without the use of counter-weights.

Available April 1, 1975

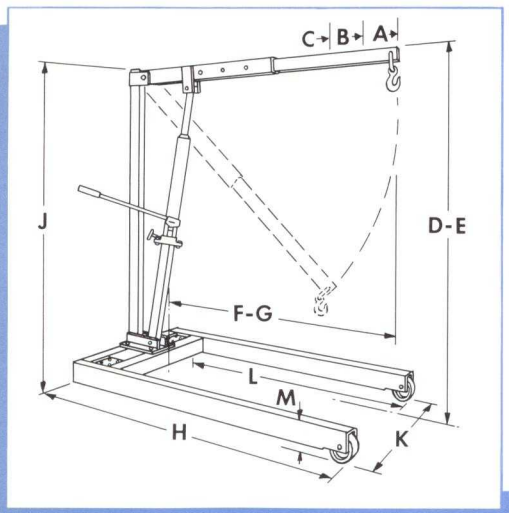
ORDERING INFORMATION

No. 1807—1,000 lb. capacity fixed-leg crane with hydraulic lifting jack and grab hook for lifting chain (lifting chain is not included). Wt., 197 lbs.

Ideal for pulling and installing engines, this versatile ½-ton capacity crane easily handles a variety of lifting jobs.



The 1807 incorporates a built-in swivel feature—puts the pump handle where you want it. Rotates 180° for operator's convenience.



DIMENSIONS

A Max. capacity, boom extended	600 lb.	G Effective boom reach (retracted)	43¾"
B Max. capacity, boom in center	750 lb.	H Overall length	61½"
C Max. capacity, boom retracted	1000 lb.	J Overall hgt., boom horizontal	67"
D Max. boom hgt., boom extended	112"	K Outside leg width (fixed)	32"
E Min. boom hgt., boom retracted	21"	L Inside leg length (fixed)	50¾"
F Effective boom reach (extended)	54¾"	M Leg height	5½"

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

MOBILE LIFTING CRANES

Military Spec.: MIL-C4551-E

with the space-saving FOLD-AWAY feature!

HYDRAULIC PUMP
Two-speed action for fast boom elevation; descent is made under precise control.

SAFETY-FLOW CONTROL VALVE Safely limits speed of boom descent under load.

U.S. Patent No. 3,367,512
Patented 1969 Canada

3-position leg spread adjustment adds versatility.

TWO HEAVY-DUTY MODELS TO CHOOSE FROM:

2,000 LB. CAPACITY
No. 1809

4,000 LB. CAPACITY
No. 1810

The versatile features and rugged construction of OTC heavy-duty cranes let you handle just about any lifting job with speed and safety. To conserve valuable floor space, the crane folds into a compact package for storage. For "close-in" work, leg spread adjusts to clear vehicle wheels, other obstacles. Telescoping boom extension gives additional reach. A 2-speed hydraulic hand pump provides fast boom travel; descent of boom is under precise control of operator. Equipped with roller-bearing mounted wheels, crane rolls smoothly into position or storage location . . . steering dolly provides easy maneuverability.

Car engine easily removed with OTC No. 1809 crane.

ORDERING INFORMATION

No. 1809—2,000 lb. capacity crane with "Fold-Away" feature and adjustable leg spread. Has hydraulic hand pump and 62" lifting chain. Shipping wt., 471 lbs.

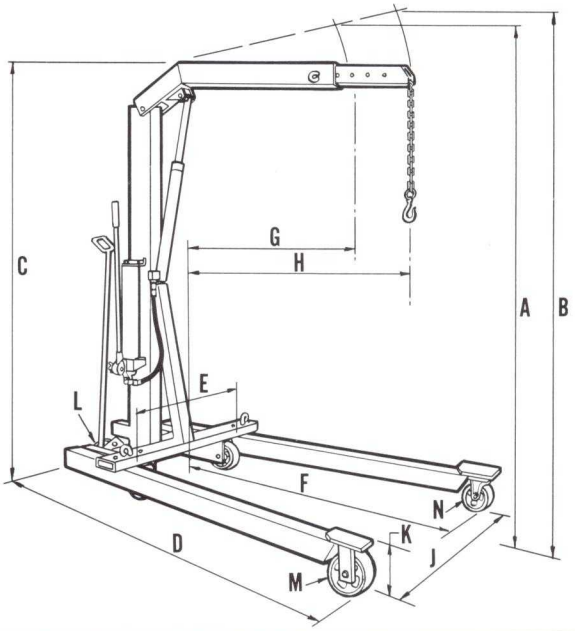
No. 1810—4,000 lb. capacity crane with "Fold-Away" feature and adjustable leg spread. Has hydraulic hand pump and 62" lifting chain. Shipping wt., 642 lbs.

OPTIONAL PUMP

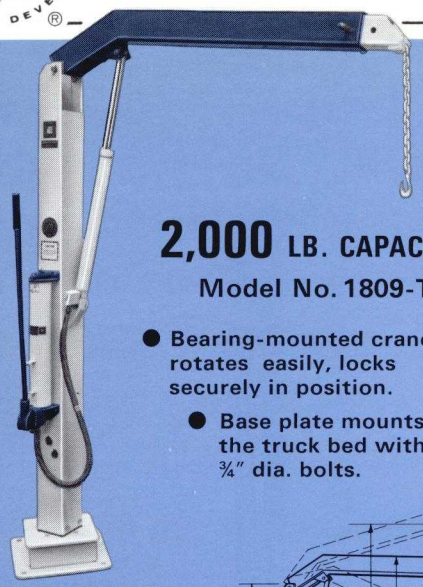
For greater speed and ease of operation, your crane can be powered with this air-driven OTC air/hydraulic pump.
CONTACT FACTORY FOR ORDERING INFORMATION!

FLOOR CRANE SPECIFICATIONS

Model No.	1809	1810
Capacity, boom retracted	2,000 lbs.	4,000 lbs.
Capacity, boom extended	1,500 lbs.	3,000 lbs.
A Max. boom hgt., boom retracted	107"	111"
B Max. boom hgt., boom extended	117"	122"
C Overall hgt., boom horizontal	80"	82"
D Overall length	83"	89"
E Minimum throat width	24"	25"
F Inside leg length	54"	57½"
G Effective boom reach (retracted)	33"	35½"
H Effective boom reach (extended)	48"	50½"
J Inside leg width	24"-36"-48" (3-position)	26"-40"-52½" (3-position)
K Leg height	8"	9½"
L Dolly wheel diameter	5"	5"
M Wheel diameter	6"	8"
N Caster diameter	5"	6"
Floor space, folded	27" x 38"	31" x 42"
Height, folded	79"	86"



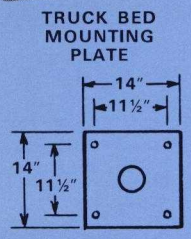
TRUCK CRANE/CRANE ACCESSORIES



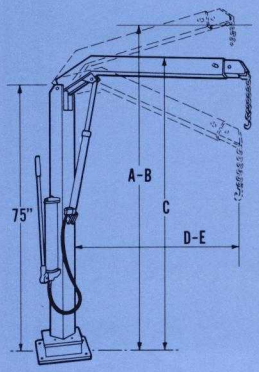
2,000 LB. CAPACITY

Model No. 1809-T

- Bearing-mounted crane rotates easily, locks securely in position.
- Base plate mounts to the truck bed with ¾" dia. bolts.



Use ¾" dia. bolts for mounting to truck bed.



Model No.	1809-T
Capacity, boom retracted	2,000 lbs.
Capacity, boom extended	1,500 lbs.
A Max. boom hgt., boom retracted	108"
B Max. boom hgt., boom extended	118"
C Overall hgt., boom horizontal	81"
D Effective boom reach (retracted)	43"
E Effective boom reach (extended)	58"
Rotation of crane	360°
Bed mounting plate size	14" x 14"
Height, boom folded	75"

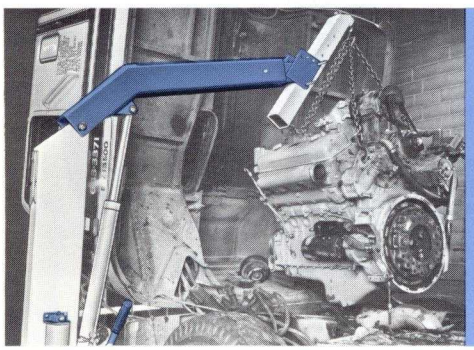
TRUCK-MOUNTED CRANE

● Dependable on-site lifting power

Now you can take dependable OTC lifting power right to the job by mounting this 2,000 lb. capacity crane on the bed of your service truck! Even when heavily loaded, crane rotates easily, thanks to ball and needle bearing mounting. And, for added safety, a positive, pin-type locking device is featured. When not in use, crane "jack-knifes" into a compact unit, leaving truck bed free for cargo. Boom descent is under precise control of operator. This crane offers the same versatile features and rugged construction of the OTC heavy duty cranes. An extra-long lifting chain is included.

ORDERING INFORMATION

No. 1809-T—2,000 lb. capacity truck crane with hydraulic hand pump, 88" lifting chain, and base plate. Shipping wt., 325 lbs.



Special attachments solve those difficult removal and replacement problems.

"CAB-OVER-ENGINE" ATTACHMENTS

Used with boom extension of crane to simplify jobs having limited overhead space . . . such as servicing "cab-over-engine" trucks. The 45° adjustment provides for horizontal entrance of the boom into work area. Adds valuable inches of reach to crane boom.

No. 1809-C—"Cab-over-engine" boom attachment for use with 2,000 lb. capacity No. 1809 series OTC cranes. Attachment has 1,500 lb. capacity. Weight, 19 lbs.

No. 1810-C—"Cab-over-engine" boom attachment for use with 4,000 lb. capacity No. 1810 series OTC cranes. Attachment has 3,000 lb. capacity. Weight, 24 lbs.

HEAVY DUTY, SELF-LOCKING LOAD-ROTOR® LOAD-POSITIONING SLINGS

There is an easy way to handle and position engines, transmissions, machinery and other heavy and bulky components! Used with a crane or hoist, "Load-Rotor" slings greatly reduce job time, effort and hazard. A self-locking worm-and-gear set in the sling's head permits rapid adjustment of the angle of the component being handled. The component is tilted or leveled by merely turning the sling's ⅝" hex drive end with a common speed handle and socket.

Special lifting brackets, included, give additional versatility.

A POSITIONING DEVICE . . . NOT A HOIST!

No. 1805...2,000 LB. CAPACITY

Has ¼" high-test chain, 52" in length, with forged swiveling safety hook on each end. A pair of special mounting brackets is also included. Gear ratio: 34-1. Lifting eye has 1¼" opening. Wt., 9 lbs.

No. 1806...4,000 LB. CAPACITY

Has 5/16" high-test chain, 60" in length, with forged swiveling safety hook on each end. A pair of special mounting brackets is also included. Gear ratio: 82-1. Lifting eye has 1¾" opening. Wt., 23 lbs.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

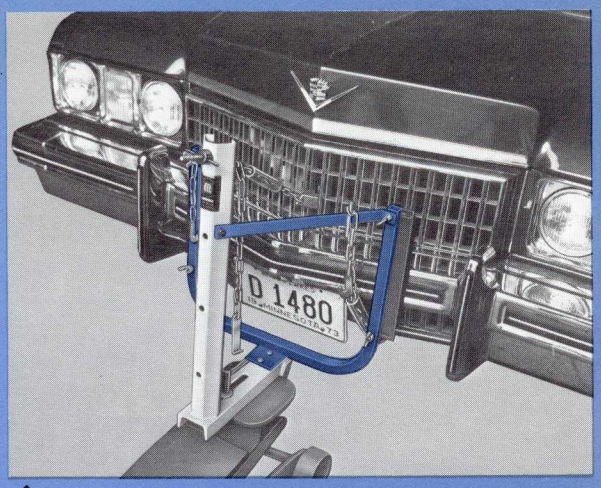
FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

Patents Pending

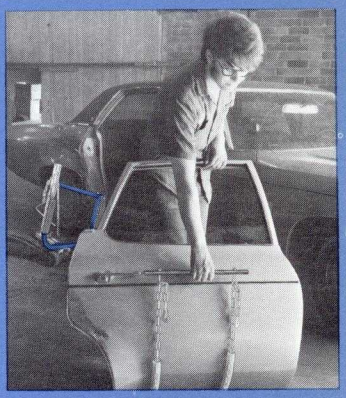
NEW...*UNIVERSAL* BUMPER & DOOR *HANDLER*

- **Securely holds any bumper or door.**
- **Makes bumper or door removal and installation a one-man operation.**
- **UNIVERSAL . . . holds all energy absorbing and conventional type bumpers.**
- **UNIVERSAL . . . holds all car doors . . . sedan, hardtop, even station wagon dual action tail gates.**
- **Fast, easy attachment to service floor jacks.**

Now it takes only one man to remove or install any door or bumper with the new Universal Bumper and Door Handler. And a one-man operation saves your service department time, effort and most important—money! The unit readily attaches to any standard service floor jack. All contact points are padded so there's no chance of scratching, denting or marring finishes. The unit can also be used as a workstand for door build-up or work on energy absorbing and standard bumpers.

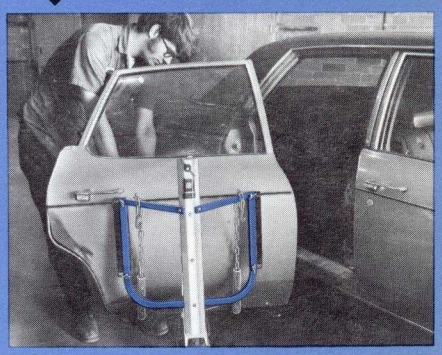


Used for bumper work, unit holds bumper firmly, fits any bumper.



Handy tote handle allows for easy carrying of door when necessary

Unit can be used as a workstand.



ORDERING INFORMATION

No. 1760—Universal bumper and door handler. (Note: Service floor jack is not included.) Shipping wt., 30 lbs.

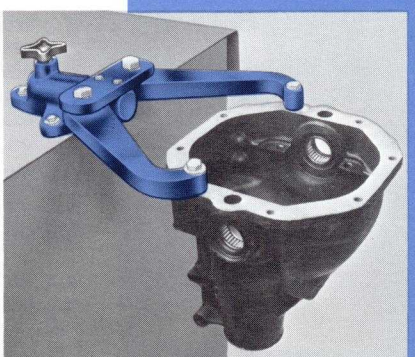
Bumpers can be removed and held while repairs are being made.

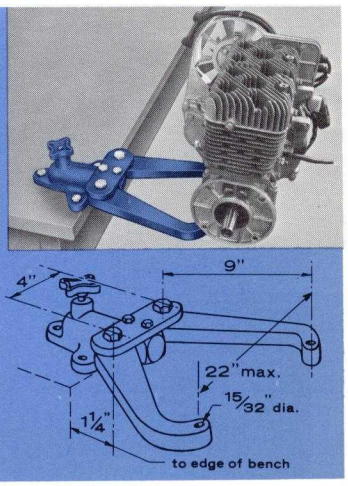
BENCH-MOUNTED HOLDING FIXTURE

- **Holds components of up to 250 lbs.**
- **Mounted unit may be rotated.**

Holds and positions small engines, transmissions, rear axle differentials and other components, leaving both hands free for work! When securely mounted to a workbench with load properly positioned, any component weighing 250 lbs. or less may be safely rotated 360° with positive stops at 90° increments. Three sides of the mounted unit remain fully exposed for working convenience. Two movable arms attached to the rotating head can be removed when not in use.

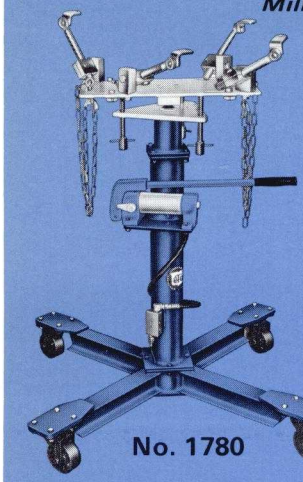
No. 7020—Bench fixture. Weight, 9½ lbs.





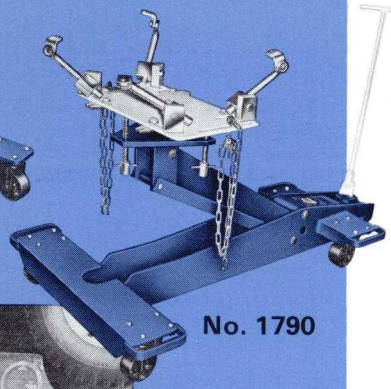
PORTABLE LIFTING EQUIPMENT

Military Spec.: MIL-L-45047-C

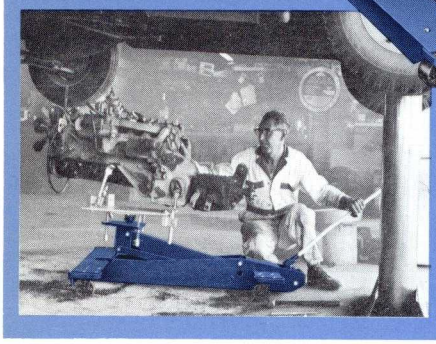


"AdjustaGrip" arms easily fasten to any component . . . eliminate the need for special adapters.

No. 1780



No. 1790



Engine and transmission assembly being removed from vehicle.

MOBILE, HIGH AND LOW-LIFT TRANSMISSION JACKS

- **Universal AdjustaGrip® mounting arms . . . special adapters not needed.**
- **Extra-high lifting range.**
- **2,000 lb. capacity.**

Designed with speed and safety in mind. Permits easy one-man transmission removal and replacement . . . ideal for handling other assemblies, too! Wide-spaced ball-bearing swivel casters provide exceptional stability and mobility. Versatile "AdjustaGrip" mounting arms feature five-point adjustment, permitting attachment to any unit . . . you can forget about special adapters! Attachment chains also furnished. Safety flow control valve slows descent of load . . . regardless of weight. Three-point screw adjustment allows precise tilting of saddle . . . essential for proper aligning of transmission with engine. Saddle rotates 360° for easily servicing transmission after removal from vehicle. Rugged construction provides 2,000 lb. capacity.

ORDERING INFORMATION

No. 1780—Hi-lift transmission jack. Lifting range: 41¾" to 72⅜". Includes four No. 1718 mounting arms, two 48" attachment chains. Shipping weight, 252 lbs.

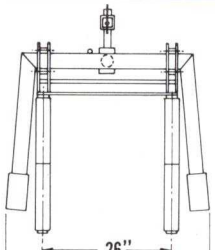
No. 1790—Lo-lift transmission jack. Lifting range: 10" to 36". Includes four No. 1718 mounting arms, two 48" attachment chains. Shipping weight, 292 lbs.

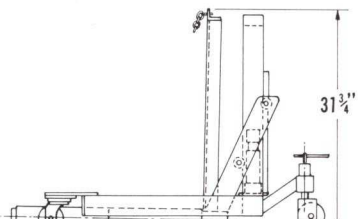
No. 1718—"AdjustaGrip" universal mounting arm (one only). Additional arms may be used with jacks to mount large transmissions, etc. Weight, 4 lbs.

No. 1770-A

Aligning the dual wheel assembly to the axle-housing is easy since the unit can tilt the wheel 2°.

Assembly is held securely in place.





DUAL WHEEL DOLLY

- **Handles both single and dual wheel assemblies with ease!**
  - **Reliable hydraulic jacking power provides easy removal and installation of heavy truck dual wheel assemblies.**
- **Adjusts for perfect alignment when wheel is being re-installed; costly damage to axle, bearings and grease seals is prevented!**

OTC makes another strenuous service job easier. The 1770-A Dual Wheel Dolly allows one man to remove, transport and replace heavy truck dual wheel and tire assemblies without strain or struggle. This ruggedly-built unit handles wheels weighing up to 1500 lbs., any tire diameter. Hydraulic jacking mechanism provides full 5" lift; gives serviceman finger tip control when positioning or lowering lifting arms. To hold wheel assembly in place during removal and transport, a 6' safety chain is provided. Free-rolling swivel casters provide effortless maneuverability. Aligning wheel to axle when re-installing is easy . . . adjusting screw on the rear caster permits tilting the unit 2°. Damage to bearings and grease seals is eliminated.

ORDERING INFORMATION

No. 1770-A—Dual wheel dolly, complete with 6' safety chain, jack and jacking handle. Shipping wt., 175 lbs.

SPECIFICATIONS

Capacity . . . . . 1500 lbs.	Tilt adjustment . . . . . 2°
Floor space . . . . . 45" x 41"	Front caster dia. . . . . 3½"
Lift travel . . . . . 5"	Rear caster dia. . . . . 4"

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

TRUCK WHEEL BEARING LOCK-NUT WRENCHES

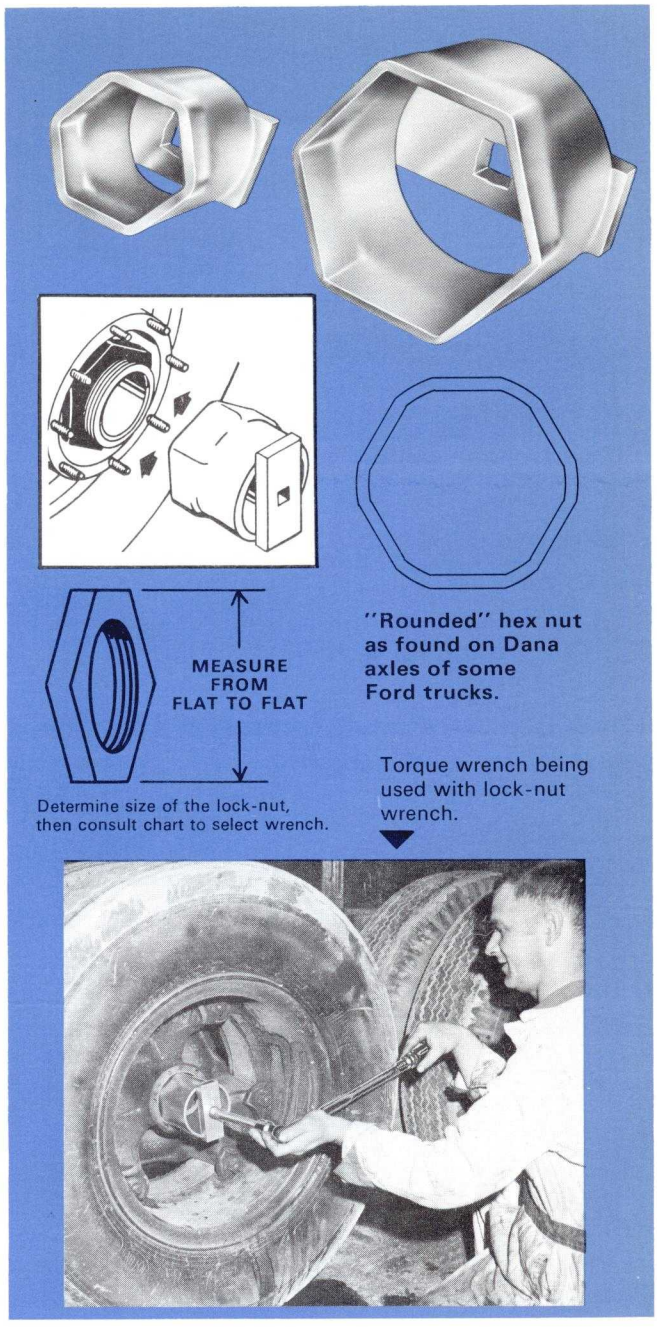
- **May be used with torque wrench for wheel bearing adjustment.**
- **Choice of 6 pt. or 8 pt. openings.**

Truck axle manufacturers now strongly advise *accurate* torquing of wheel bearing lock-nuts to prevent premature bearing failure, assure safety. Each of these OTC wrenches has a ¾" drive square opening, permitting the use of an extension and torque wrench to tighten the lock-nut as required. Lock-nut removal and installation is simple, even when the new wide-rim wheels are involved, since a long extension may be attached to the wrench, providing the necessary clearance.

Wrenches are made of high-strength steel; openings resist "rounding out." A full range of sizes is available with 6 pt. or 8 pt. openings. See chart below to select the sizes you need!

OTC Wrench No.	Opening Size	OTC Wrench No.	Opening Size
1901	2 3/32" (6 pt.)	1935	3 1/16" (8 pt.)
1920	2 1/4" (6 pt.)	1908	3 1/4" (6 pt.)
1902	2 3/8" (6 pt.)	1909	3 1/4" (8 pt.)
*1936	2 3/8" (6 pt.)	1924	3 3/8" (8 pt.)
1903	2 3/8" (8 pt.)	1910	3 1/2" (6 pt.)
1921	2 1/2" (6 pt.)	1911	3 1/2" (8 pt.)
1904	2 9/16" (6 pt.)	1925	3 3/4" (8 pt.)
1905	2 9/16" (8 pt.)	1926	3 3/4" (6 pt.)
*1928	2 9/16" (6 pt.)	1927	3 13/16" (8 pt.)
1922	2 5/8" (6 pt.)	1912	3 7/8" (6 pt.)
1923	2 3/4" (6 pt.)	1913	3 7/8" (8 pt.)
1937	2 3/4" (8 pt.)	1914	4" (6 pt.)
1932	2 7/8" (6 pt.)	1915	4 1/8" (6 pt.)
1933	2 7/8" (8 pt.)	1916	4 3/8" (6 pt.)
1906	3" (6 pt.)	1917	4 3/8" (8 pt.)
1907	3" (8 pt.)	1918	4 7/8" (6 pt.)
1934	3 1/8" (6 pt.)	1919	4 7/8" (8 pt.)

*Fits special "rounded" 2 9/16" hex nut as found on Dana axles of some Ford trucks.


MEASURE FROM FLAT TO FLAT
"Rounded" hex nut as found on Dana axles of some Ford trucks.
Determine size of the lock-nut, then consult chart to select wrench.
Torque wrench being used with lock-nut wrench.

TUBULAR SPANNER WRENCHES

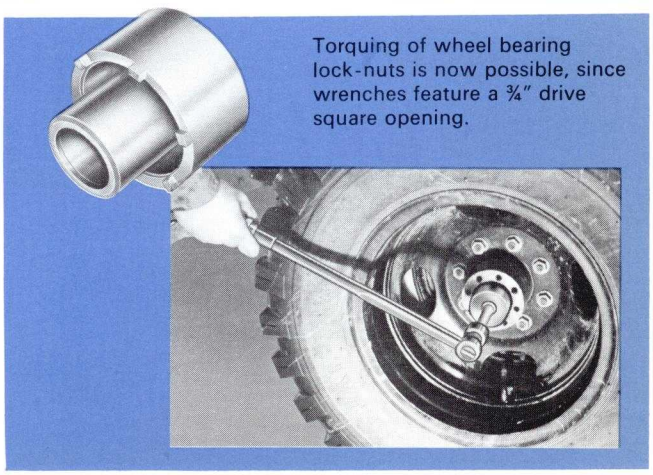
- **Features ¾" drive square opening.**

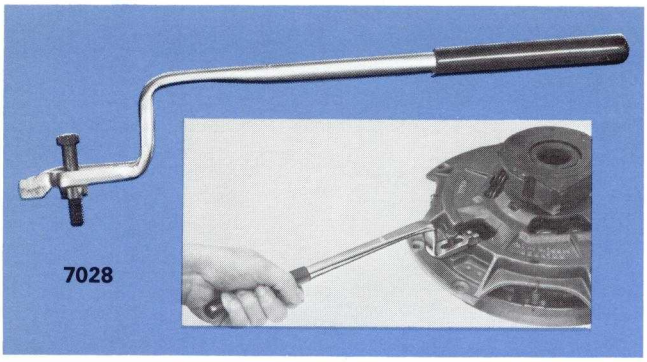
These specially-designed spanner-type wrenches remove and install the wheel bearing lock-nuts of Chevrolet-built truck axles. The ¾" drive square opening makes it possible to use a torque wrench for accurate adjustment of wheel bearings.

No. 1929—Wrench for servicing '46 thru current Chevrolet and GMC 5,200 and 7,200 lb. axles. Socket O.D.—2 5/8".

No. 1930—Wrench for servicing '54 thru current Chevrolet and GMC 11,000 to 13,500 lb. axles. Socket O.D.—2 7/8".

No. 1931—Wrench for servicing '54 thru current Chevrolet and GMC 15,000 lb. axle; '66 thru current 17,000 lb. 2-speed axle and '65 thru current 15,000 lb. trailing axle. Socket O.D.—3 5/8".

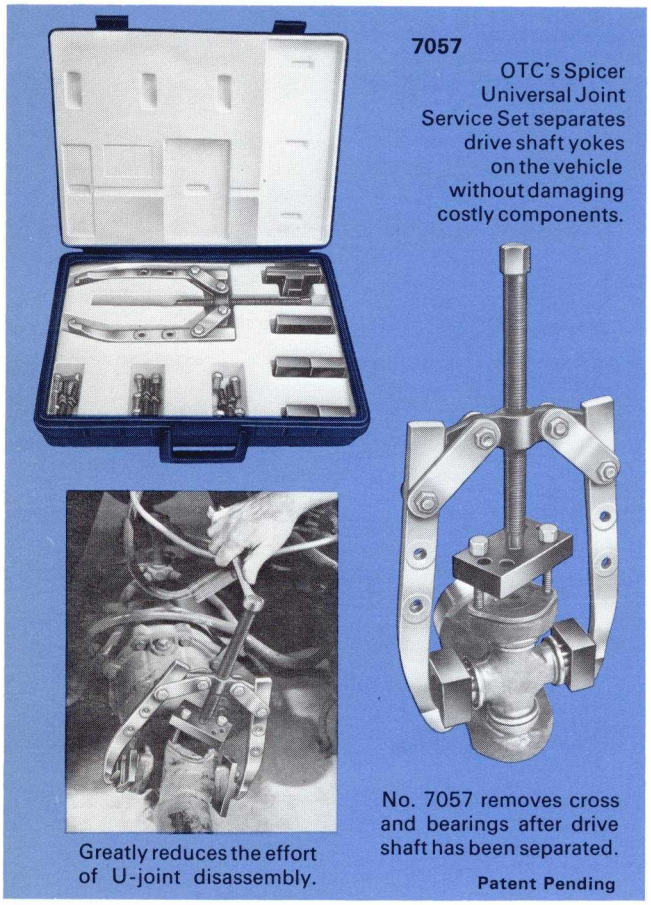




ADJUSTING WRENCH FOR SPICER-BUILT HEAVY-DUTY CLUTCHES

The easy to use OTC No. 7028 Spicer Truck Clutch Adjusting Wrench will solve the difficult, time-consuming job of internal adjustment of Spicer *angle-spring* and multiple lever clutches found on nearly 50% of all heavy-duty trucks. Until now, a pry-bar or other makeshift methods were used and often resulted in damage to parts, poor job-performance and excessive downtime.

No. 7028—Spicer truck clutch adjusting wrench.


7057
OTC's Spicer Universal Joint Service Set separates drive shaft yokes on the vehicle without damaging costly components.
Greatly reduces the effort of U-joint disassembly.
No. 7057 removes cross and bearings after drive shaft has been separated.
Patent Pending

SPICER UNIVERSAL JOINT SERVICE SET

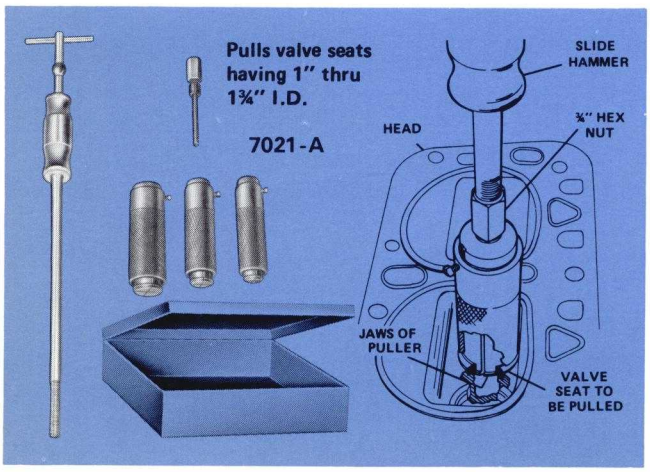
NEW

- **Mechanically disassembles the Spicer bolted end-cap type universal joints.**
  - **Eliminates makeshift, sledgehammer methods.**
- **Does not damage bearings or yoke assemblies.**
  - **Removes even the most stubborn bearings.**
- **Services 1600 thru 1880-series U-joints.**

No longer must the disassembly of the heavy-duty Spicer universal joints be such a difficult task. OTC's No. 7057 Spicer Heavy-Duty Universal Joint Remover removes even the most rusted and corroded bearings easily, mechanically, without damage to costly U-joint components, even where the space is limited. The No. 7057 applies up to 7 tons of force to separate the yoke assemblies and remove the bearings the right way. This rugged, dependable removing tool was specifically designed for universal joint removal, eliminating makeshift, sledgehammer methods too often used. The No. 7057 is a must item for any truck shop doing drive line work. Cuts costs drastically when other methods have failed. It's designed to service a full range of Spicer universal joints—1600 thru 1880-series.

No. 7057—Spicer universal joint service set with adapters. Handy plastic storage box and complete instructions are included. Wt., 13 lbs., 5 oz.

Available March 1, 1975



VALVE SEAT REMOVING SET

Easily removes damaged valve seats, either straight or angled type. Straight pull and 360° gripping action of puller collet prevent damage to head, eliminate danger of flying valve seat fragments. Simple to use . . . select proper puller size; adjust puller depth by using new seat as guide; position puller and tighten hex nut. Attach slide hammer, and remove even the most stubborn seat with a few sharp blows.

No. 7021-A—Valve seat removing tool set in metal box, complete with slide hammer assembly.

No. 7021—Valve seat removing tool set in metal box, *less* slide hammer assembly (any slide hammer having a ⅝"-18 threaded end may be used with set).

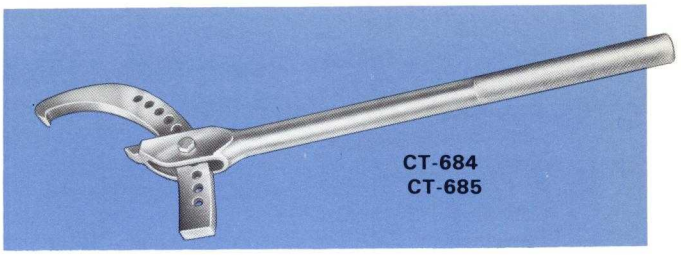
OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

ADJUSTABLE SPANNER WRENCHES

Replace many fixed-size wrenches . . . cover range of capacities needed to service industrial tractors, other equipment. Drop-forged jaws adjust to eleven positions for a capacity of 4¾" to 12¾" O.D. Handle overall length: 24"; diameter 1".

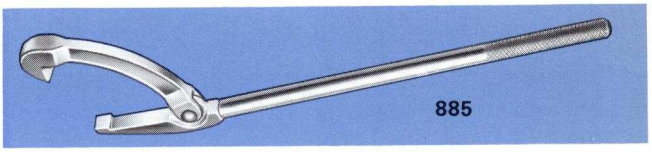
No. CT-684—Spanner wrench with one ⅜" thick jaw.
No. CT-685—Spanner wrench with two interchangeable jaws: one ⅜" thick, one ¾" thick.



ADJUSTABLE SPANNER WRENCH

Needed wherever turret adjusting nuts or packing gland nuts are used. Capacity: 1½" to 4". Handle overall length: 19".

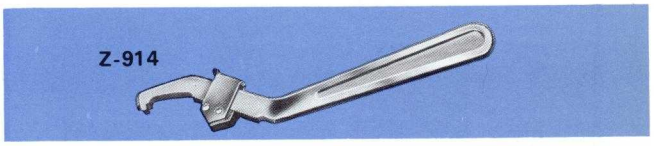
No. 885—Adjustable hook spanner wrench.



SPECIAL ADJUSTABLE SPANNER

Ideal for adjusting pillow block bearings. Also, works well on International model "M" water pump or power take-off on all IHC tractor models. Adjustable from ½" to 2¾".

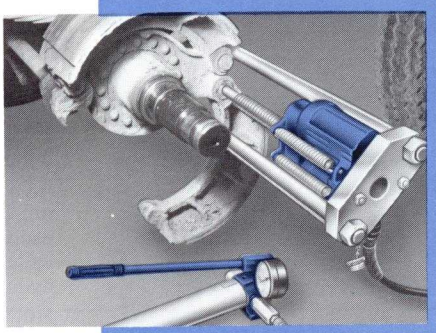
No. Z-914—Special adjustable spanner. 9¼" long.



KING PIN and BRAKE ANCHOR PIN PUSHER

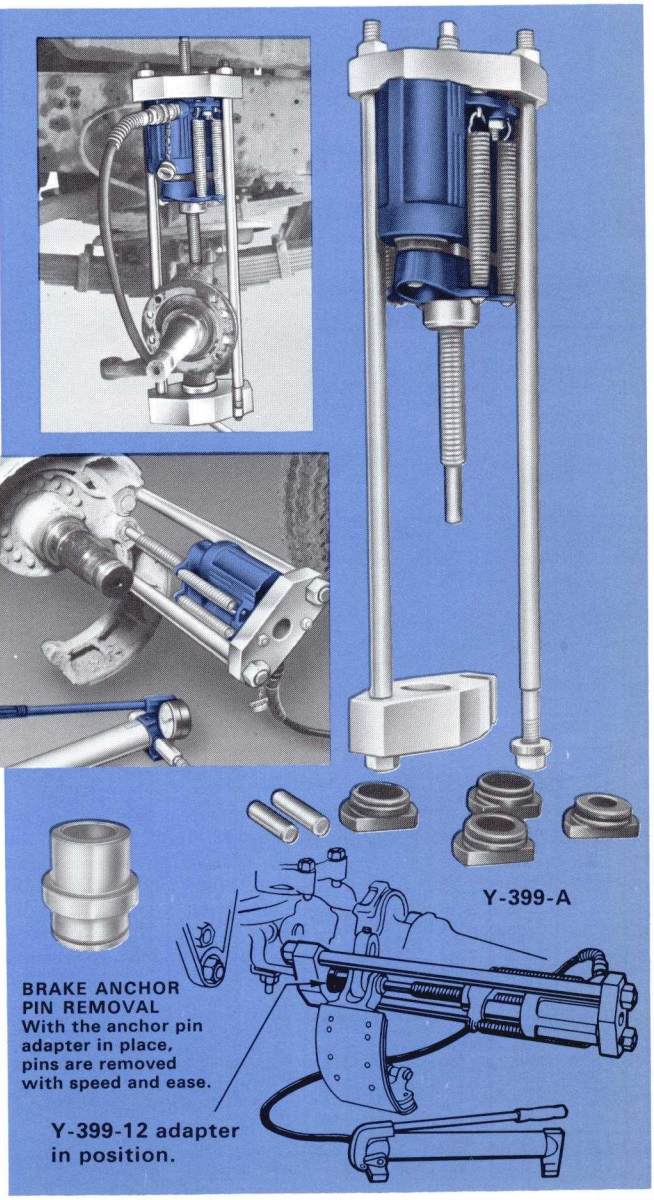
30-TON CAPACITY

- Removes king pins from front suspensioı of most models of trucks and buses.
- Removes anchor pins from heavy vehicle brake
- Hydraulic force and durable, precision tooling replace dangerous torch and hammer methods.



Removing stubborn king pins or brake anchor pins can be one of the most frustrating, difficult and time-wasting service jobs around. The "heat-and-beat" methods too often used are unsafe and can damage costly components. Here's the answer! When servicing king pins, this unit is quickly mounted on the front axle . . . a unique "swinging gate" feature makes set-up easy. Both straight and tapered king pins may be serviced. Four special collars and two pins accommodate king pins of ⅞" to 2" in diameter and up to 11¼" long. With tooling in position, up to 30 tons of OTC hydraulic force is applied . . . even the most tightly "frozen" king pin is eased out. A job that could consume the better part of a work day is done in minutes.

With the special anchor pin adapter installed in the pusher's base block and the unit properly positioned over the brake spider, the anchor pin can be quickly and easily pressed out.


Y-399-A
BRAKE ANCHOR PIN REMOVAL
With the anchor pin adapter in place, pins are removed with speed and ease.
Y-399-12 adapter in position.

ORDERING INFORMATION

No. Y-399-A—King pin and anchor pin pusher with Y-21 hydraulic hand pump, hose, hose half coupler, Y30-A "Power-Twin" 30-ton ram and anchor pin adapter Y-399-12.

No. Y-399—King pin and anchor pin pusher with anchor pin adapter Y-399-12, less hydraulic components.

No. Y-399-12—Anchor pin adapter only. Used with king pin pusher for brake anchor pin removal.

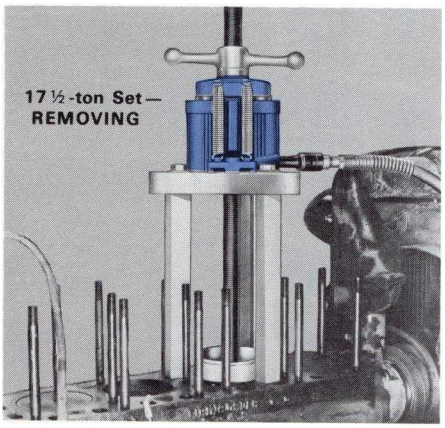
NOTE: If you already own OTC 30-ton hydraulic components, you may wish to order No. Y-399.

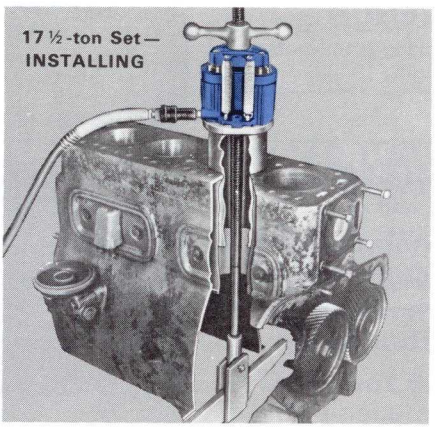
ENGINE CYLINDER SLEEVE PULLERS-INSTALLERS

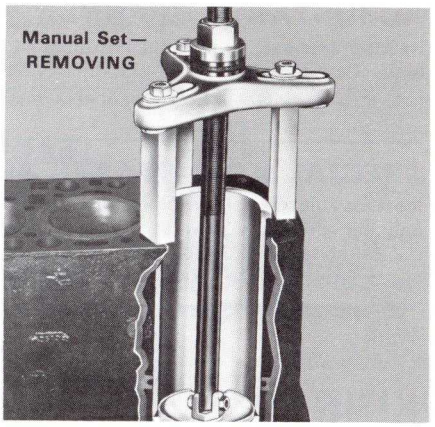
Fed. Spec.: GGG-P-00643

MANUALLY OPERATED & HYDRAULIC SETS . . . MAKE SLEEVE PULLING/INSTALLING FAST & EASY!

For tractors, trucks, buses and other power units. Handles both wet and dry sleeves without removing head studs! Saves time, money and labor in re-sleeving engines . . . time required is cut up to 75%, effort up to 50%. Choice of three sets: manually-operated, screw-powered; 17½-ton hydraulically-powered; and 30-ton hydraulically-powered. A wide range of adapter plates is available to fit more than 750 engine models. Select the set which best meets your needs and the proper adapter plates to fit your equipment. Conversion sets and accessories are available to meet your changing requirements . . . this is true versatility!



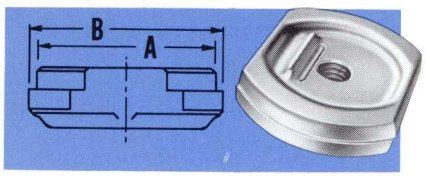




Cut engine re-sleeving time by 75%, effort by 50% . . . on trucks, buses, tractors and many other power units. OTC cylinder sleeve pullers-installers handle both wet and dry sleeves . . . without removal of cylinder head studs. Choice of three sets.

ADAPTER PLATES FOR 17½-TON AND MANUALLY-OPERATED SETS

For use with set Nos. 970, 970-HY and 973. To order, determine engine bore size ("A" dimension) and O.D. of sleeve to be pulled ("B" dimension), and select the plate which has proper dimensions by consulting the chart below.



Bore Inches	"A" I.D. +.010 −.000	"B" O.D. +.010 −.000	OTC Plate No.
3.0	2 $^{3}/_{4}$	3 $^{1}/_{4}$	970-1A
3 $^{1}/_{8}$	3.110	3.343	970-1B
3 $^{1}/_{8}$	3 $^{1}/_{32}$	3 $^{1}/_{32}$	970-2
3 $^{1}/_{16}$	3 $^{1}/_{32}$	3 $^{1}/_{32}$	970-2F
3 $^{1}/_{16}$	3.171	3 $^{1}/_{32}$	970-2FC
3 $^{1}/_{4}$	3 $^{1}/_{32}$	3 $^{1}/_{32}$	970-3
3 $^{5}/_{16}$	3.297	3.634	970-3C
3 $^{1}/_{4}$	3.238	3.435	970-3RD
3 $^{3}/_{8}$	3 $^{1}/_{32}$	3 $^{3}/_{32}$	970-4
3 $^{5}/_{16}$	3 $^{1}/_{64}$	3 $^{3}/_{64}$	970-4B
3 $^{3}/_{8}$	3 $^{3}/_{64}$	3 $^{3}/_{64}$	970-4H
3 $^{1}/_{2}$	3 $^{1}/_{32}$	3 $^{1}/_{16}$	970-5
3 $^{7}/_{16}$	3.441	3.531	970-5-1FC
3 $^{7}/_{16}$	3 $^{7}/_{64}$	3 $^{9}/_{64}$	970-5C
3 $^{1}/_{2}$	3.484	3.640	970-5D
3 $^{1}/_{2}$	3.485	3.845	970-5E
3 $^{7}/_{16}$	3 $^{7}/_{64}$	3 $^{1}/_{32}$	970-5FC
3 $^{5}/_{8}$	3 $^{1}/_{32}$	3 $^{1}/_{32}$	970-6
3 $^{5}/_{8}$	3.610	3.788	970-6B
3.600	3.585	3.657	970-6C
3.624	3.609	3.729	970-6K
3 $^{3}/_{4}$	3 $^{7}/_{64}$	4 $^{3}/_{32}$	970-7
3 $^{3}/_{4}$	3.735	3.855	970-7B
3 $^{3}/_{4}$	3 $^{7}/_{64}$	3 $^{9}/_{64}$	970-7C
3 $^{5}/_{16}$	3 $^{5}/_{64}$	3 $^{3}/_{32}$	970-7D
3 $^{7}/_{16}$	3.547	3.663	970-7E
3 $^{1}/_{16}$	3.671	3.792	970-7F
3 $^{5}/_{16}$	3 $^{5}/_{64}$	3 $^{9}/_{64}$	970-7K
3 $^{1}/_{16}$	3.797	4.137	970-7L
3 $^{1}/_{16}$	3.797	3.905	970-7M
3 $^{7}/_{8}$	3.864	4.052	970-7Q
3 $^{7}/_{8}$	3 $^{7}/_{32}$	4 $^{5}/_{16}$	970-8
3.8998	3.885	4.050	970-8F
3.9000	3.890	4.058	970-8FT
3 $^{7}/_{8}$	3 $^{9}/_{64}$	4 $^{3}/_{32}$	970-8M
3 $^{15}/_{16}$	3.922	4.256	970-8W
4.0	3 $^{1}/_{32}$	4 $^{1}/_{32}$	970-9
4.0	3 $^{3}/_{64}$	4 $^{3}/_{32}$	970-9B
4.0	3 $^{3}/_{64}$	4 $^{1}/_{32}$	970-9C
4.0	3.985	4.465	970-9J

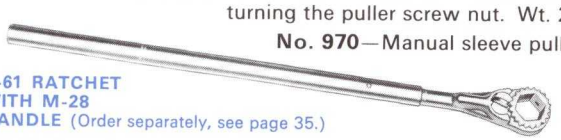
Bore Inches	"A" I.D. +.010 −.000	"B" O.D. +.010 −.000	OTC Plate No.
4.40	4.390	4 $^{39}/_{64}$	970-9W
4 $^{1}/_{8}$	4 $^{5}/_{32}$	4 $^{1}/_{32}$	970-10
4 $^{1}/_{8}$	4.109	4.229	970-10C
4 $^{1}/_{8}$	4 $^{7}/_{64}$	4 $^{3}/_{64}$	970-10K
4 $^{1}/_{4}$	4 $^{1}/_{32}$	4 $^{1}/_{32}$	970-11
4 $^{1}/_{4}$	4.235	4.470	970-11B
4 $^{5}/_{16}$	4.308	4.455	970-11C
4 $^{3}/_{8}$	4 $^{1}/_{32}$	4 $^{5}/_{32}$	970-12
4 $^{3}/_{8}$	4 $^{3}/_{64}$	4 $^{3}/_{64}$	970-12K
4 $^{7}/_{16}$	4.421	4.850	970-12N
4 $^{1}/_{2}$	4 $^{1}/_{32}$	4 $^{5}/_{32}$	970-13
4 $^{1}/_{2}$	4.484	4.630	970-13H
4 $^{1}/_{2}$	4.484	4.731	970-13K
4 $^{1}/_{2}$	4.485	4.937	970-13W
4 $^{5}/_{8}$	4 $^{1}/_{32}$	5 $^{1}/_{64}$	970-14
4 $^{5}/_{8}$	4.608	4.729	970-14C
4 $^{3}/_{4}$	4.735	5 $^{1}/_{32}$	970-15
4 $^{3}/_{4}$	4 $^{7}/_{64}$	5 $^{1}/_{64}$	970-15K
4 $^{7}/_{8}$	4 $^{7}/_{32}$	5 $^{1}/_{32}$	970-16
4 $^{7}/_{8}$	4.860	4.980	970-16K
5	4.984	5.312	970-17B
5	4 $^{63}/_{64}$	5 $^{23}/_{64}$	970-17C
5 $^{1}/_{8}$	5 $^{3}/_{32}$	5 $^{1}/_{32}$	970-18
5 $^{1}/_{8}$	5 $^{3}/_{32}$	5 $^{1}/_{16}$	970-18C
5 $^{1}/_{4}$	5 $^{1}/_{32}$	5 $^{3}/_{32}$	970-19
5 $^{3}/_{8}$	5 $^{1}/_{32}$	5 $^{3}/_{32}$	970-20
5.400	5.385	6.093	970-20B
5 $^{1}/_{2}$	5 $^{1}/_{32}$	5 $^{1}/_{16}$	970-21
5 $^{1}/_{2}$	5.484	5.718	970-21B
5 $^{5}/_{8}$	5 $^{1}/_{32}$	6 $^{3}/_{32}$	970-22
5 $^{3}/_{4}$	5 $^{23}/_{32}$	6 $^{1}/_{32}$	970-23
5 $^{3}/_{4}$	5.718	6.468	970-23C
5 $^{3}/_{4}$	5.734	6.062	970-23K
6	5 $^{1}/_{32}$	6 $^{23}/_{32}$	970-25
6 $^{1}/_{4}$	6.235	6 $^{23}/_{32}$	970-27
6 $^{1}/_{4}$	6.235	6 $^{39}/_{64}$	970-27C
6 $^{3}/_{4}$	6.734	7 $^{1}/_{4}$	970-27F
7	6 $^{63}/_{64}$	7 $^{21}/_{32}$	970-28
8 $^{1}/_{2}$	8 $^{31}/_{64}$	9 $^{1}/_{32}$	970-30
9 $^{3}/_{8}$	9 $^{23}/_{64}$	10 $^{5}/_{32}$	970-31

FOR DETAILS, SEE OTC BULLETIN SL-67

MANUALLY-OPERATED SET, NO. 970

This manually-operated, screw-powered unit removes engine sleeves of more than 450 makes and models of trucks, buses, tractors, etc. Adapter plates (listed at left) are inserted through bore from the top, making sleeve removal a one-man operation. Adapter plates not included in set. No. P-61 reversible ratchet and No. M-28 24" tubular handle are recommended for turning the puller screw nut. Wt. 21 lbs.

No. 970—Manual sleeve puller set.



P-61 RATCHET WITH M-28 HANDLE (Order separately, see page 35.)

17½-TON HYDRAULIC SET, NO. 970-HY

Removes, installs sleeves of over 450 makes and models of trucks, buses, tractors, etc. Hydraulic ram and pump may also be used with other OTC pullers, shop presses, etc. Adapter plates not included . . . see listing at left. If you already own OTC 17½-ton hydraulics, order set No. 973.

No. 970-HY—Sleeve puller, with hydraulics. Wt. 82 lbs.

No. 973—Sleeve puller, less hydraulics. Wt. 48 lbs.

30-TON HYDRAULIC SET, NO. 975-HY

Especially designed for removing sleeves of large gas or diesel engines in heavy trucks such as Caterpillar, Cummins, Hercules, IHC, Mack, Waukesha, etc. Fully adjustable to clear cylinder head studs. Adapter plates are not included . . . see listing at right. Ram and pump may be used with other OTC pullers, etc.

No. 975-HY—Sleeve puller, with hydraulics. Wt., 115 lbs.

No. 975-B—Sleeve puller, less hydraulics. Wt., 69 lbs.

975-C CONVERSION KIT

Converts the 30-ton sets, listed above, from 30-ton REMOVERS to 17½-ton INSTALLERS. Installation seldom requires more than 10 tons of force, therefore we do not manufacture 30-ton installer-plates. Kit guaranteed to 17½-ton capacity.

No. 975-C—Conversion Kit. Wt., 17½ lbs.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

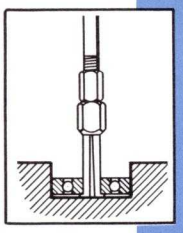
BLIND-HOLE PULLERS/SLEEVE PULLERS

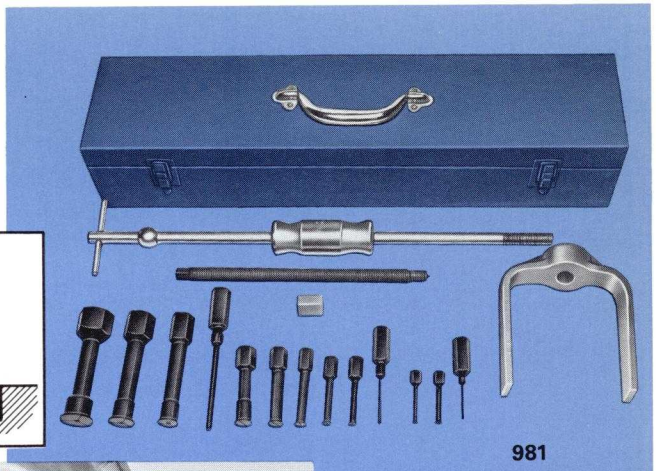
BLIND-HOLE PULLER SETS

Removal of bearings, bushings, sleeves and other parts from blind holes can now be accomplished with ease. These new OTC sets provide a selection of expanding collets in various sizes. Collet is placed through bore of part to be removed, then expanded with actuator pin so that lips of collet secure a positive grip for pulling. Force is exerted by means of forcing screw and bridge assembly or slide hammer. Choice of three available sets.

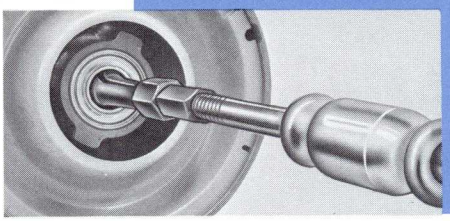
CONTENTS OF SETS

Part No.	Description	Set No. 981	Set No. 982	Set No. 983
927-2	Forcing Screw	X	X	X
927-3	Forcing Screw Nut	X	X	X
943-S3	Hammer, 2½ Lb.	X		
943-S12	Shank and Tee Bar Assembly	X		
28250	Actuator Pin (⅛" Dia.)	X	X	
28253	Actuator Pin (3/16" Dia.)	X	X	
28256	Actuator Pin (5/16" Dia.)	X		X
28323	Metal Box	X		
33856	Collet—5/16"	X	X	
33857	Collet—⅜"	X	X	
33858	Collet—7/16"	X	X	
33859	Collet—½"	X	X	
33860	Collet—⅝"	X	X	
33861	Collet—¾"	X	X	
33862	Collet—⅞"	X	X	
33863	Collet—1" to 1¼"	X		X
33864	Collet—1¼" to 1½"	X		X
33865	Collet—1½" to 1¾"	X		X
41331	Bridge	X	X	X





981



Choice of three available sets . . . the "Master" set, No. 981, covers a size range of 5/16" to 1¾" I.D., and includes a sturdy metal storage box.

UNIVERSAL PULLER FOR WET-TYPE SLEEVES

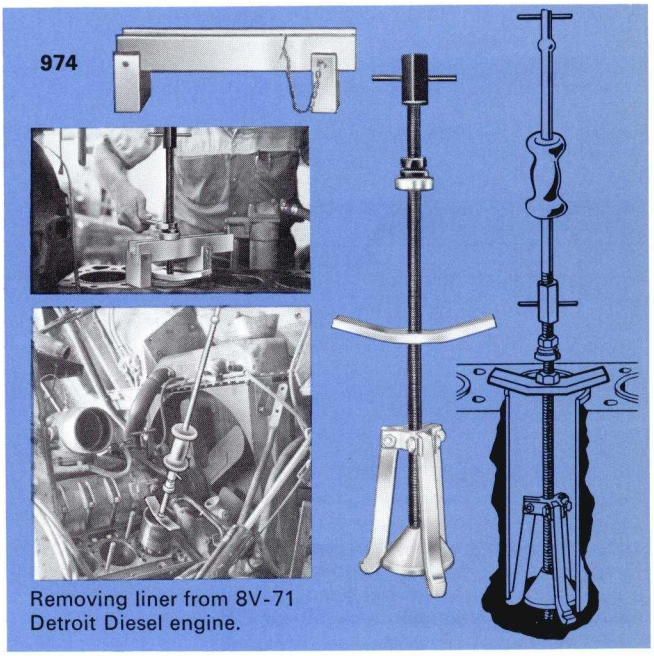
- **Reduces engine re-sleeving time and effort.**
- **Pulls wet sleeves from 3" to 6½" in diameter . . . no special adapters needed.**

Removal of stubborn, wet-type cylinder sleeves doesn't have to be a time-wasting task that slows down your engine overhaul jobs. Put this universal OTC puller in your shop and sleeve removal headaches are over, service profits are boosted and risk of damage to engine blocks caused by makeshift methods is ended.

This unique tool does the job faster than ordinary sleeve pullers because set-up time is slashed. Cone adjustment positions the puller jaws quickly, locking bar is tightened. To aid in breaking "frozen" sleeves loose, an adjustable bridge is positioned on the cylinder block and the bearing-mounted forcing nut is tightened. Next, the bridge is removed and the slide hammer assembly is attached. With just a few sharp blows of the hammer, the sleeve is pulled. In most cases, job-time will average less than two minutes per cylinder. Best of all, special adapters are not needed . . . there's nothing else to buy! Adjustable jaws fit sleeves 3" to 6½" in diameter.

No. 974-A—Sleeve puller with 5-lb. slide hammer assembly.

No. 974—Sleeve puller less 5-lb. slide hammer assembly.

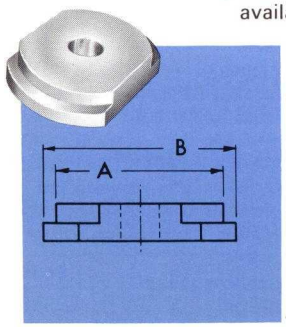


974

Removing liner from 8V-71 Detroit Diesel engine.

ADAPTER PLATES FOR 30-TON HYDRAULIC SET

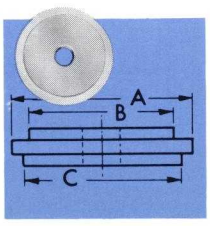
To order, determine engine bore size ("A" dimension), O.D. of sleeve ("B" dimension) and select plate from chart. Special plates are available . . . give "A" and "B" dimensions.



Bore	"A"-ID	"B"-OD	Plate No.
4 7/16"	4.421"	4.547"	975-12
4⅜"	4.360"	4.598"	975-12A
4¼"	4.235"	4.440"	975-12X
4½"	4.485"	4.562"	975-14
4⅝"	4.610"	4.846"	975-15
4⅞"	4.860"	5.044"	975-16
5"	4.997"	5⅛"	975-17
5"	4.985"	5.350"	975-17B
5¼"	5.235"	5.598"	975-19B
5½"	5.485"	5.848"	975-21B
5⅝"	5.610"	5.970"	975-21C
5¾"	5.734"	6.095"	975-21D
6¼"	6.235"	6.595"	975-21M

DRY SLEEVE INSTALLING PLATES

Each dry sleeve installing plate covers a wide range of bore sizes and the reversible design makes both sides usable. These dry sleeve installer-plates are designed for use with the manual and 17½-ton hydraulic puller-installers. Although no dry sleeve installer-plates have been designed specifically for use with the 30-ton puller-installers, the 976 series installer-plates may be used if the 17½-ton capacity is not exceeded.



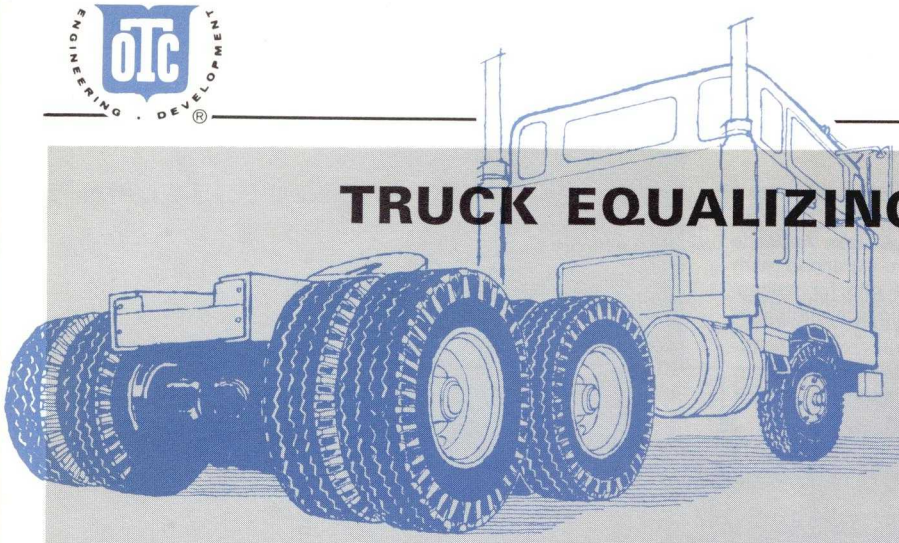
No.	Fits Sleeves From	"A"	"B"	"C"
976-1	3 3/16" to 3 7/16"	3⅞"	3.171"	3.421"
976-2	3 9/16" to 3⅞"	4¼"	3.546"	3.859"
976-3	4⅛" to 4⅜"	4¾"	4.109"	4.359"
976-4	4⅜" to 4¾"	5¼"	4.390"	4.734"
976-5	4 13/16" to 5¾"	6⅜"	4.797"	5.734"

Special plates made to order: send dimensions for quotation.

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

Recommended by
Hendrickson Mfg. Co. Service
Engineers

TRUCK EQUALIZING BEAM *service equipment*



- For removing and installing center and end bushings on Hendrickson equalizing beams
- Removes hanger tubes and beam end adapters

FOR: All models R280, R340, R380, R440, R500 and R700 suspensions

Save hours of time and labor when replacing equalizing beam center and end bushings of Hendrickson tandem suspensions, with which many popular makes of trucks are often equipped. Replacement of such bushings is a vital service operation which must be performed periodically to insure safety and proper operation of the truck. 50 tons of OTC hydraulic power, plus precision tooling, make the job fast and easy. Center bushings may be serviced with truck wheels and tires in place. Includes all tooling necessary for servicing R280 and R340 series beams; order optional part nos. Y-860, Y-861 and Y-862 in addition to Y-850-AV, Y-850-A or Y-850 set to service R380 and R440 series beams.

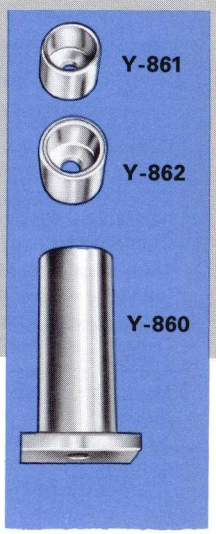
SEE BULLETIN EB-74
This bulletin describes OTC's special equalizing beam service equipment in greater detail.

Y-850-AV SERVICE SET

ADDITIONAL TOOLING

TOOLING FOR R380 AND R440 SERIES SUSPENSIONS

(Order separately)



No. Y-850-AV SERVICE SET
Set contains necessary tooling for servicing R280 and R340 Hendrickson equalizing beam center and end bushings. Set also contains Y-27-A "Vanguard Jr." hydraulic pump (electrically driven) with remote control hand switch, hose, gauge, and half coupler with 50-ton "Power-Twin" hydraulic ram with plain hole insert for speed and ease of service operation.

No. Y-850-A SERVICE SET
Set contains same tooling as Y-850-AV set but has Y-21-A hydraulic hand pump, gauge, tee, hose and half coupler with 50-ton "Power-Twin" hydraulic ram with plain hole insert.

No. Y-850 BASIC TOOLING SET
Set contains tooling only, less hydraulic power for servicing R280 and R340 series beam center and end bushings. Y-850 basic tooling set may be used with OTC hydraulics or in a shop press of 50 tons capacity or more.

TOOLING FOR R380 AND R440
Required in addition to Y-850-AV, Y-850-A or Y-850 sets to service R380 and R440 series suspensions with rubber center bushings. Order part nos. Y-860, Y-861 and Y-862.

Contents of Basic Set

OTC No.	Description
Y-851	Receiving Tube—For removal and installation of center bushings.
Y-852	Removing Adapter—For center bushings.
Y-853	Installing Adapter—Center bushings.
Y-854-A	Receiving Tube—For removal of end bushings.
Y-855-A	Removing Adapter—For end bushings.
Y-856	Adapter Clamp—For installation of end bushings.
Y-857	Adapter Clamp Plate—For installation of end bushings.
Y-858	Receiving Tube—For removal of end bushing hanger pins.
Y-859-A	Removing Adapter—For end bushing hanger pins.
Y-863-A	Pulling Screw—For all removal and installation operations.
Y-864	Sledging Adapter.
Y-865-D	End Bushing Adapter Puller.
Y-50-15	Speed Nut (all operations).
Y-50-15-B	Hex Nut (all operations).

These tools are required in addition to Y-850 basic set for servicing R380 and R440 series only. Not included in Y-850 set.

OTC No.	Description
Y-860	Receiving Tube—Removal and installation of center bushings.
Y-861	Removing Adapter—For center bushings.
Y-862	Installing Adapter—Center bushings.

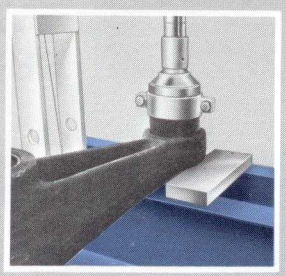
OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

FOR PARTS INFORMATION, SEE OTC PARTS CATALOG

HENDRICKSON SUSPENSION SERVICE SETS NOS. Y-850, Y-890-A AND Y-840-A

Tooling of Y-850 series service set in position after beam has been dropped from hangers. Provides fast, easy removal of end bushing.

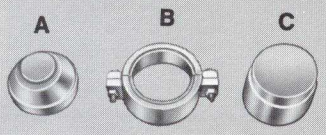
Y-890-A set used with Y-850 basic set for removing center bushings from RU series suspensions. Truck wheels and tires may remain in place but saddle caps are removed.

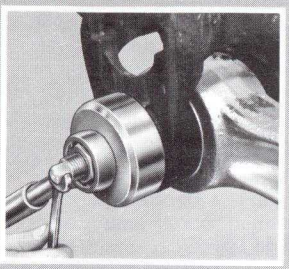


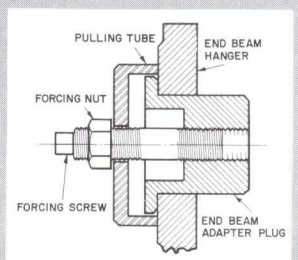
Y-840-A set used with 100-ton capacity shop press to remove and install center and beam end bushings of R500 and R700 series beams. Shown installing beam end bushing.

Two sets of adapters for servicing Hendrickson equalizing beam center and end bushings are available for use with the basic Y-850 set or a 100-ton capacity shop press. These sets may be ordered separately and will service all Hendrickson beams with rubber bushings including the RU series suspensions. Nos. Y-850, Y-890-A, and Y-840-A must be ordered separately.

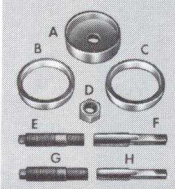
Y-840-A





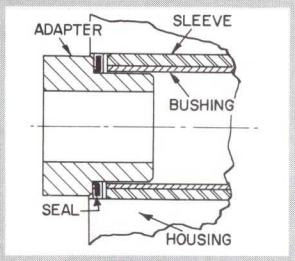


END BUSHING ADAPTER PULLER SET

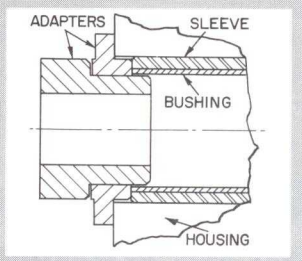


Y-865-D Set

No. Y-865-D is included in the Y-850, Y-850-A, and Y-850-AV sets. The Y-865-D end bushing adapter puller is used to remove the end beam hanger adapter plug so that beam may be dropped for access to end beam bushing. Handles end adapters with either ¾" or ⅞" dia. cored holes. Y-865-D may be ordered separately.

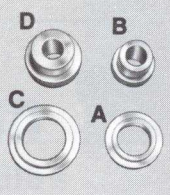


Removing bronze bushing.



Installing bronze bushing.

BRONZE BUSHING SERVICE SET



Y-875 Set

No. Y-875 set is used with Y-850 basic set for servicing new style bronze center bushings on R340, R380 and R440 series suspensions. Y-875 set allows for removal and installation of center bushings with truck wheels and tires in place after saddle caps have been removed. Y-875 also properly installs the bronze center bushing grease seals.

HENDRICKSON SUSPENSION SERVICE SETS

No. Y-840-A Set

Y-840-A is required to service R500 and R700 heavy-duty suspensions. The Y-840-A is intended for use with a shop press of 100-tons capacity and allows for removal and installation of end and center bushings on heavy-duty suspensions.

Contents of Y-840-A		
Part No.		Description
A	Y-844-A	Adapter
B	Y-843-A	Adapter Clamp
C	Y-842	Adapter

No. Y-890-A Set

Y-890-A set is required to service RU series suspensions. For use with Y-850-AV, Y-850-A or Y-850 sets. Order separately.

Contents of Y-890-A	
Part No.	Description
25417	Nut
35854	Screw

No. Y-865-D Set

Y-865-D set is required to remove end bushing adapters with ¾" or ⅞" diameter cored holes on Hendrickson equalizing beams. Y-865-D replaces Y-865-B and may be ordered separately as replacement parts. Y-865-D included in Y-850-AV, Y-850-A and Y-850 sets.

Contents of Y-865-D		
Part No.		Description
A	28445	Plate
B	200664	Space adapter
C	200664	Space adapter
D	10220	Nut
E	28446	Forcing screw (1"-14)
F	14232	Tap-hand (1"-14)
G	28447	Forcing screw (⅞"-9)
H	11940	Tap-hand (⅞"-9)

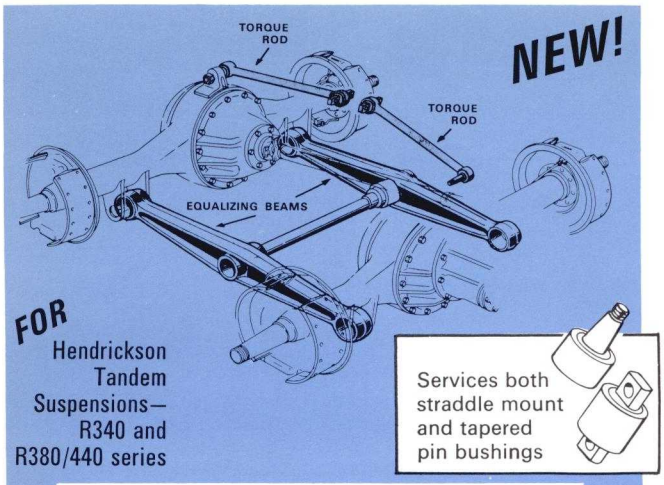
No. Y-875 Set

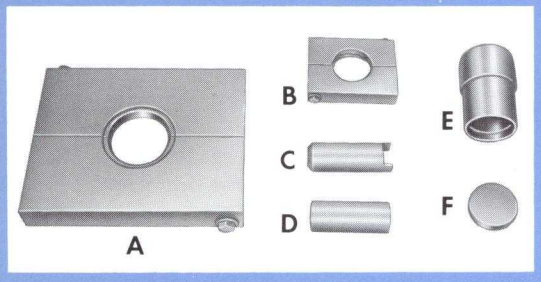
Y-875 is required to remove and install bronze center bushings on certain Hendrickson suspensions. The Y-875 set is intended for use with the Y-850-AV, Y-850-A or Y-850 sets and must be ordered separately. Y-875 also installs the bronze center bushing grease seals to the proper depth for longer bushing life.

Contents of Y-875		
	Part No.	Description
A	Y-876	Adapter
B	Y-877	Adapter
C	Y-878	Adapter
D	Y-879	Adapter

SEE PAGE 58
FOR TORQUE ROD BUSHING SERVICE EQUIPMENT!

TORQUE ROD SERVICE SET/DIESEL NOZZLE TESTER





CONTENTS OF Y-820 SET

A. Y-825 Press plate
B. Y-824 Clamp Assy.
C. Y-826 Remover
D. Y-822 Remover
E. Y-823 Rem./Repl.
F. Y-821 Cap

TRUCK TORQUE ROD BUSHING SERVICE EQUIPMENT

- Recommended by Hendrickson Mfg. Co. service engineers.
- Removes original equipment rubber mounted torque rod bushings.
- Removes and installs replacement cartridges . . . the correct way!

Replacement of original equipment rubber mounted torque rod bushings of Hendrickson tandem suspensions can now be a simple, fast and easy shop operation. No longer must you stand the expense of purchasing a new or reconditioned assembly, or maintaining an inventory of replacement torque rods. With the use of any hydraulic shop press having a capacity of 25 tons or more and OTC's No. Y-820 torque rod service set, bushings can be replaced quickly in your own shop. Helps you keep your rolling stock on the road . . . down-time and replacement costs are kept at a minimum. With the No. Y-820, chance of damaging the torque rod during bushing removal is eliminated. When installing replacement cartridges, tooling contacts only the outer steel shell; permits installation of the bushing cartridge without damaging the replacement bushing or the torque rod.

ORDERING INFORMATION

No. Y-820—Torque rod bushing service set for R340 and R380/440 series Hendrickson tandem suspensions. Set does not include shop press. Wt., 38 lbs.

Military Spec.: MIL-T-45049-B

Nozzle is connected to tester by means of connector tube and special adapters which are available.

nozl-rater®

DIESEL FUEL INJECTION NOZZLE TESTER

● Proper nozzle function assures top engine performance!

Performs required tests on a wide variety of fuel injection nozzles in automotive, construction equipment, industrial, farm and other diesel engines. Tests for leakage, "pop-off" pressure, spray pattern and "chatter" of nozzle valve stem. Tester has a rugged, lightweight reservoir which holds a big 7/10 gallon of fuel . . . no need for frequent refilling. A replaceable 5-micron filter traps impurities. Large, easy-to-read gauge is protected by a special guard and incorporates a maximum reading indicator. Portable for use in the field. Accessory kit also available.

ORDERING INFORMATION

No. Y-900—"Nozl-rater" diesel fuel injection nozzle tester. 5000 p.s.i. capacity. Complete with gauge guard. Weight (empty) 13 lbs.

No. Y-910—Universal accessory kit for use with Y-900 tester. Weight, 1 lb., 10 oz. Contains the following accessories in metal storage box:

Y900-2—Fuel line connector tube.
Y900-3—90° adapter, 9/16"-18 male R. H. thd. (Ermeto 24°) to 9/16"-18 female R. H. thd. (Ermeto 24°).
Y900-4—Ermeto seat adapter (straight), 1/2"-20 male L. H. thd. (Ermeto 24°) to 9/16"-18 male R. H. thd. (Ermeto 24°).
Y900-5—60° seat adapter (straight), 1/2"-20 male L. H. thd. (60°) to 9/16"-18 male R. H. thd. (Ermeto 24°).
Y900-6—Straight adapter, 12 x 1.5mm female R. H. thd. to 1/2"-20 female L. H. thd.
Y900-7—Straight adapter, 14 x 1.5mm female R. H. thd. to 1/2"-20 female L. H. thd.
Y900-8—Straight adapter, 18 x 1.5mm female R. H. thd. to 1/2"-20 female L. H. thd.
Y900-9—Straight adapter, 9/16"-18 female R. H. thd. to 1/2"-20 female L. H. thd.
Y900-10—Straight adapter, 5/8"-18 female R. H. thd. to 1/2"-20 female L. H. thd.
Y900-14—Straight adapter, 3/8"-24 male R. H. thd. to 9/16"-18 male R. H. thd. (female Ermeto 24°).
Y900-15—Straight adapter, 1/2"-20 male L. H. thd. (Ermeto 24° & 90° seat) to 9/16"-18 male R. H. thd. (Ermeto 24°).

SPECIFICATIONS

Overall width	5¾"
Overall length	16"
Overall height	11¼"
Weight (empty)	13 lbs.
Max. pressure	5000 p.s.i.
Max. reservoir capacity of diesel fuel (160 cu. in.)	692 gal.
Usable reservoir capacity gal. of diesel fuel (145 cu. in.)	628
Outlet port	For 3/8" tube
Gauge	Calibrated 0-5000 p.s.i. has 3½" dial face with maximum reading indicator needle
Gauge connection	¼" NPT female
Stroke of ½" dia. piston	¾"
Volume per full stroke	147 cu. in. (2410 cu. mm.)
Intake filter	5 micron

OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

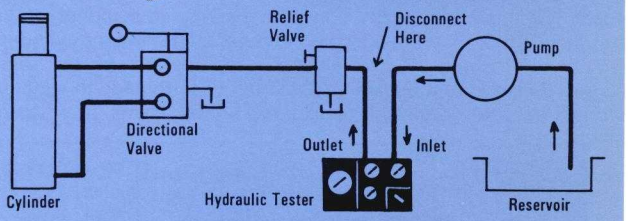
HYDRAULIC SYSTEM TESTERS

PORTABLE, "IN-LINE"

Hydraulic Tester

- **Ends guesswork in "trouble-shooting" of hydraulic systems, isolates faulty components!**
- **Accurately checks oil flow, pressure and temperature!**

Hit-and-miss guesswork, needless teardown and excessive downtime are prevented with this unit. You can accurately check hydraulic system component performance under operating conditions to pin-point trouble. Unit is adaptable to "in-line" testing hook-ups, since it can withstand full system pressure at both inlet and outlet ports. And, it will not be damaged if incorrectly connected to system! Precise control of pressure is possible. Accuracy is maintained regardless of fluid viscosity or temperature. Tests systems delivering up to 50 g.p.m. at operating pressure to 5000 p.s.i. Fully portable for field use. New dual pressure gauge model permits highly-accurate readings in low pressure ranges . . . useful when testing power shift transmissions, power steering systems, etc.



TESTING A PUMP This diagram represents a typical hook-up in which the Hydraulic Tester is used to evaluate performance of system components.

ORDERING INFORMATION

No. Y-90—Tester with *single* pressure gauge (0-5,000 p.s.i.). Has two adapter unions for ¾" NPT male fittings. Wt. 33 lbs.
No. Y-91—Same as Y-90, except has *metric-calibrated* gauges.
No. Y-92—Tester with *dual* pressure gauges (0-600 and 0-5000 p.s.i.). Has two adapter unions for ¾" NPT male fittings. Wt. 37 lbs.
No. Y-93—Same as Y-92, except has *metric-calibrated* gauges.

HYDRAULIC TESTER ACCESSORIES

No. Y21-10—10 ft. Hose Assembly. Fits both inlet and outlet of tester (2 req'd). ¾" NPT male ends, ¾" I.D.

No. Y-85—Set of Accessories. Used with tester for servicing most models of International-Harvester tractors.

CONTENTS OF SET NO. Y-85

31578—Return Nozzle Tube, ½" NPT female.
11864—Flare Adapter, 9/16" — 18 straight thd., with 37° male x ½" NPT male.
11865—Service Tee, SAE straight thd., with "O" ring boss 9/16"—18 with right angle 9/16"—18—37°.
23590—Pump Port Adapter, 9/16"—18 straight thd., male with ½" NPT thd., male.
22210—Pump Port Adapter, 9/16"—18 straight thd., male with 9/16"—18 straight thd., for 37° flare tube.
22211—Power Steering Adapter used with No. 30780-2.
23645—Adapter Assembly, consisting of: 11865 Service Tee, (9/16"—18 straight thd.); 30780-2 Adapter, (9/16"—18 female x 7/8"—14 male); 30780-1 Adapter, (9/16"—18 female x 9/16"—18 female).
23646—Adapter Assembly, consisting of: 11866 Service Tee, (¾"—16 straight thd.); 30780-4 Adapter, (3/8" NPT female x 7/8"—14 male); 30780-3 Adapter, (¾"—16 female x ¾"—16 female).
23647—Adapter Assembly, consisting of: 11867 Service Tee, (7/8"—14 straight thd.); 30780-5 Adapter, (7/8"—14 female x 7/8"—14 female).

No. Y-86—Set of Accessories. Used with tester to service the following John Deere tractor models: (agricultural) 2510, 3010, 3020, 4010, 4020, 5010, 5020; (industrial) 3010 wheel, 4010 wheel, 5010-I, JD500, JD600, JD700, JD700 series A, JD760.

CONTENTS OF SET NO. Y-86

Y-3001—Coupling Adapter, ¾"—16 female x 1 1/16"—12 female.
Y-3002—Coupling Adapter, ¾"—16 female x 9/16"—18 female.
Y-3003—Coupling Adapter, ¾"—16 female x ½"—20 female.
Y-3004—Coupling Adapter, ¾" NPT male x ¾"—16 female. For use with John Deere No. AR26407R hose, which has ¾"—16 male thread.
Y-3005—Union Fitting, ¾"—16 male x ¾" NPT female. For use with OTC No. Y21-10 hose, which has ¾" NPT male thread. (2 incl.).

No. Y-88—Set of Accessories. Used with tester to service the following John Deere tractor models: (agricultural) 1010, 1020, 2010, 2020; (industrial) 1010 crawler, 1010 wheel, 2010 crawler, 2010 wheel, JD300, JD350, JD400, JD440, JD440A, JD450.

CONTENTS OF SET NO. Y-88

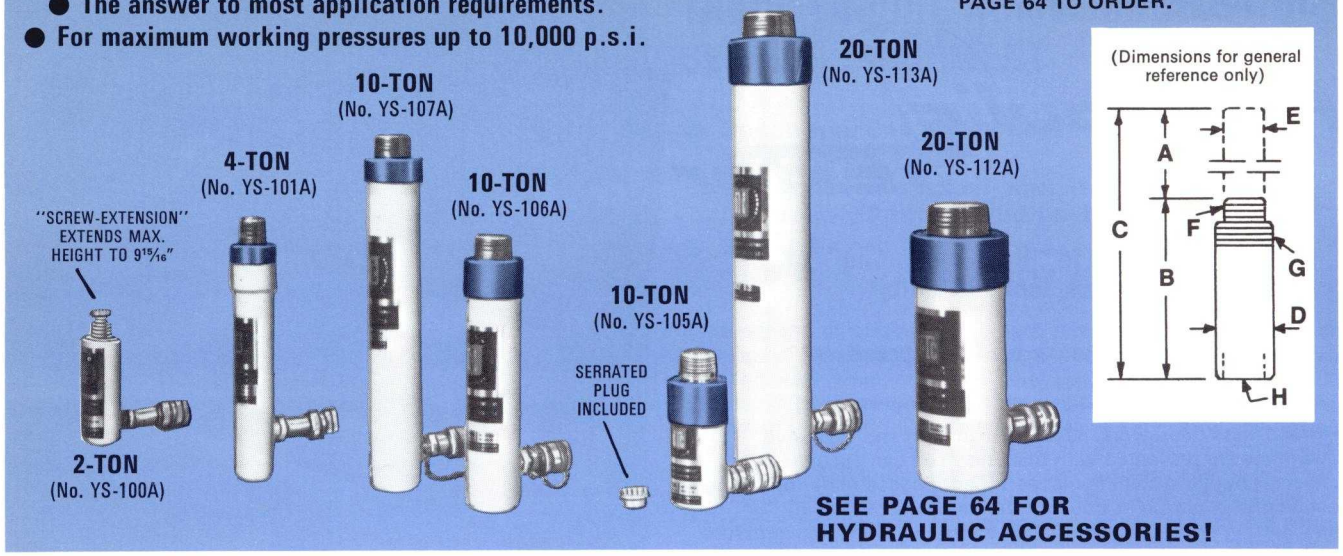
Y-3010—45° Union Adapter, 1" NPT male x ¾" NPSM female.
Y-3011—Straight Union Connector, 1" NPTF female x ¾" NPSM female.
Y-3012—Pipe Reducer, 1" NPTF male x ¾" NPTF female.
Y-3013—Service Tee, ¾" NPT female (2) x ¾" NPT male (2 incl.).
Y-3014—Straight Union Adapter, ¾" NPT female x ½" NPT male.
Y-3015—Straight Union Adapter, ¾" NPS female x ½" NPT female.
Y-3016—45° Union Adapter, ¾" NPS female x ¾" NPT male.
Y-3017—Straight Union Connector, ¾" NPT female x ¾" NPS female (2 incl.).
Y-3018—Straight Union Adapter, ¾" NPT male x ¾" NPS female (2 incl.).
Y-3019—Cap, ¾" NPT.
Y-3020—Special Pipe Plug, ¾" NPT.
Y-3021—Special Adapter, ¾" NPT female x 1 1/16"—12 male.
Y-3022—45° Union Adapter, 7/8"—14 UNF female 37° JIC x ¾" NPT female 30° dry seal.
Y-3023—45° Union Adapter, 7/8"—14 UNF male 37° JIC x ¾" NPT female 30° dry seal.
Y-3024—Connector, 1 5/16"—12 UNF female 37° JIC x ¾" NPT female 30° dry seal.
Y-3025—Connector, 1 5/16"—12 UNF male 37° JIC x ¾" NPT male 30° dry seal.

In addition to being portable for shop or field use, the Hydraulic Tester is ideally suited for use in a hydraulic testing bench!

HYDRAULIC SINGLE-ACTING RAMS

- **Available in capacities of from 2 to 20 tons.**
- **The answer to most application requirements.**
- **For maximum working pressures up to 10,000 p.s.i.**

RAM CAPS NOT INCLUDED WITH THESE RAMS ...SEE PAGE 64 TO ORDER.



(Dimensions for general reference only)

SEE PAGE 64 FOR HYDRAULIC ACCESSORIES!

Make OTC's "YS" series rams your first choice when choosing smooth, dependable hydraulic power for your automotive service needs. Ranging in capacity from 2 to 20 tons, in standard stroke lengths of from 3" to 13½", these compact, lightweight cylinders require a minimum of mounting space. Several of the rams feature threaded ram collars and internal base threads to simplify mounting, and threaded piston rod ends. Rams now have chrome-plated piston rod and rod wiper, to prevent internal contamination, even under severe service in unclean work environments. New packing design assures positive sealing in all pressure ranges, yet *full piston return* characteristics of "YS" rams are maintained. Additional bearing surface has been designed into these units, to effectively resist the punishment exerted by off-center loads.

OTC No.	Capacity in Tons	Stroke "A"	Oil Capacity (cu. in.)	Effective Ram Area (sq. in.)	Internal P.S.I. at Capacity	Spring Return	Height		Piston Protrusion at Collapsed Ht.	Diameter		Piston Thread (N.P.T.) "F"	Collar Thread (Straight) "G"	Internal Base Thread (N.P.T.) "H"	Shipping Wt. (lbs.)
							Collapsed "B"	Extended "C"		"D"	"E"				
YS-100A	2	3"	3.0	.994	*4,025	No	5 9/16"	†8 9/16"	¼"	1½"	⅞"	None	None	None	2¾
YS-101A	4	5"	5.0	.994	*8,050	Yes	10½"	15½"	1⅛"	1½"	1 1/16"	¾"	1½"-16	¾"	4½
YS-105A	10	2¼"	4.66	2.0739	**9,650	Yes	5 1/16"	7 5/16"	††5/16" & 1 1/16"	2¼"	1⅜" &1⅝"	1¼"	2¼"-14	None	6½
YS-106A		6"	12.44	2.0739	**9,650	Yes	11½"	17½"	1 1/16"	2¼"	1⅝"	1¼"	2¼"-14	1¼"	10¼
YS-107A		10"	20.74	2.0739	**9,650	Yes	15½"	25½"	1 1/16"	2¼"	1⅝"	1¼"	2¼"-14	1¼"	13¾
YS-112A	20	5"	24.5	4.9087	***8,150	Yes	10 11/16"	15 11/16"	1⅛"	3⅜"	2⅜"	2"	3 5/16"-12	2"	21⅝
YS-113A		13½"	66.3	4.9087	***8,150	Yes	20"	33½"	1⅛"	3⅜"	2⅜"	2"	3 5/16"-12	2"	36¾

Cylinders YS-100A and YS-101A include a Y25A-1 ¼" NPT half coupler; oil port threads are ¼" NPT.

Cylinders YS-105A thru YS-113A include a Y25-1 ⅜" NPT half coupler; oil port threads are ⅜" NPT.

*Develops 4.97 tons at maximum working pressure of 10,000 p.s.i.

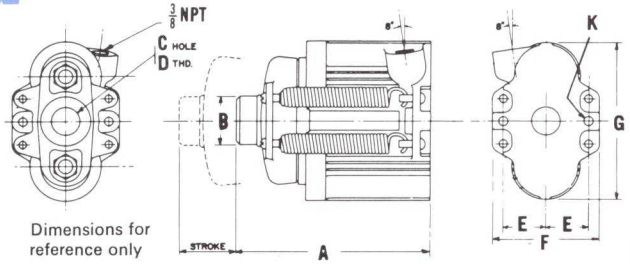
**Develops 10.369 tons at maximum working pressure of 10,000 p.s.i.

***YS-112A and YS-113A develop 24.543 tons at maximum working pressure of 10,000 p.s.i.

†YS-100A has a piston "screw-extension" (1⅜") which will extend the maximum height to 9 15/16".

††The piston end is designed to accept either a serrated plug (¼" high) or a threaded (1¼" NPT) plug (1 1/16" high). Both plugs are included when you order a YS-105A cylinder.

POWER-TWIN® HYDRAULIC RAMS



Dimensions for reference only

Each OTC "Power-Twin" center-hole ram is lightweight, compact and easy to handle. Because of the center-hole feature, jacking screws, cables, puller screws, etc., can be extended straight through the unit. Ram features a basic head which allows operator to change from a tapped hole to a plain hole by changing the head insert. Each ram includes a threaded ram head insert and a ⅜" NPT ram half coupler.

SEE PAGE 64 FOR ACCESSORIES!

OTC No.	Capacity (tons)	Stroke	Oil Capacity (cu. in.)	Eff. Area (sq. in.)	Internal p.s.i. at Capacity	A	B	C	D	E	F	G	K	Wt. (lbs.)
Y15-A	17½	2"	7.06	3.53	10,000	6⅞"	1¾"	1 1/16"	1"—8	1½"	3¾"	5¾"	11/32"	12
Y30-A	30	2½"	15.7	6.28	10,000	8 7/16"	2¼"	1 19/64"	1¼"—7	1 13/16"	4½"	7½"	15/32"	24
Y50-A	50	3"	29.4	9.81	10,000	10 9/16"	2⅞"	1 43/64"	1⅝"—5½	2⅜"	5⅞"	9⅜"	21/32"	49

RAM & PUMP COMBINATION SETS

Fed. Spec.: GGG-J-63

- **Pre-selected hydraulic power packages.**
- **For maintenance equipment and body shop applications.**
- **Choose from a wide range of ram and pump types.**

YA-SERIES RAM/PUMP COMBINATION SETS

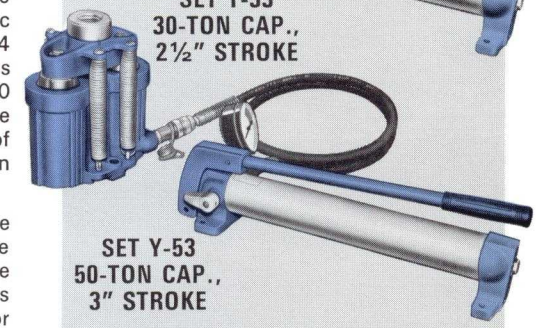
Set Nos. YA-1 thru YA-5 feature popular OTC single-speed hydraulic hand pumps. Sets YA-13 and YA-14 use the Y-13 air/hydraulic pump as their power source. This 10,000 p.s.i. air-driven power unit may be used with any shop air supply of 40-120 p.s.i. Provides fast piston rod approach.

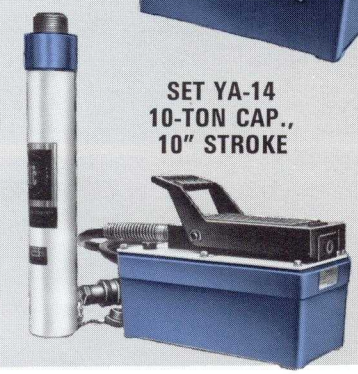
Compact and lightweight, these single-acting "YS"-series rams are ideal for use on automotive frame straightening equipment, presses and in many other lifting, pushing or clamping applications. Require a minimum of mounting space, and remote operation is facilitated by the 6' high-pressure hose. Ram-pump-hose sets are available in 4 to 20-ton capacities.

"POWER-TWIN" RAM/PUMP COMBINATION SETS

Sets Y-18, Y-33 and Y-53 feature extremely versatile "Power-Twin" rams. Originally designed for use with OTC pullers, "Power-Twin" rams have found hundreds of other applications! The center-hole feature permits extending jacking screws, cables, puller screws, etc., straight through the ram. Lightweight, single-acting, spring-return. Each has internal capacity of 10,000 p.s.i.

SEE PAGE 64 FOR HYDRAULIC ACCESSORIES!

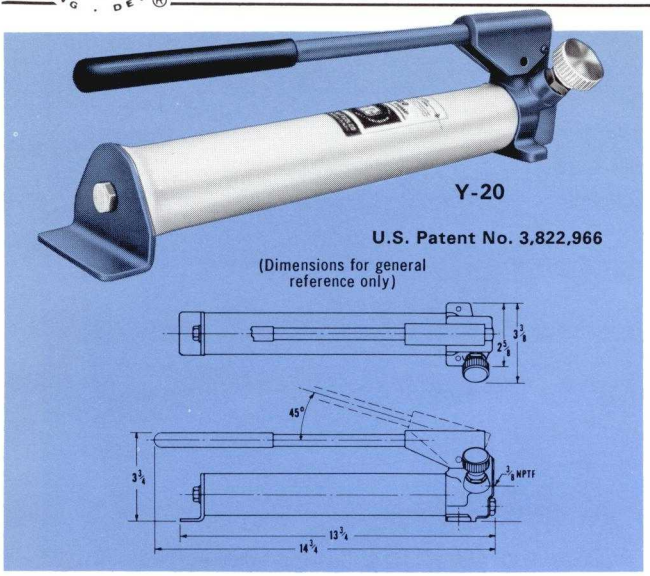




OTC Set No.	Capacity (tons)	Cylinder Stroke	Cylinder Collapsed Height	Cylinder No.	Pump No.	Hose No.	Hose Coupler No.	Pump Speed	Gauge No.	Weight (lbs.)
YA-1	4	5"	10½"	YS-101A	Y-20	Y21-5	Y25A-3	Single	—	13
YA-2	10	2¼"	5 1/16"	YS-105A	Y21-1	Y21-2	Y25-3	Single	—	27½
YA-3	10	6"	11½"	YS-106A	Y21-1	Y21-2	Y25-3	Single	—	31⅞
YA-4	10	10"	15½"	YS-107A	Y21-1	Y21-2	Y25-3	Single	—	35⅜
YA-5	20	5"	10 11/16"	YS-112A	Y21-1	Y21-2	Y25-3	Single	—	41⅜
Y-18	17½	2"	6⅞"	Y15-A	Y21-1	Y21-2	Y25-3	Single	Y1-A*	35½
Y-33	30	2½"	8 7/16"	Y30-A	Y21-1	Y21-2	Y25-3	Single	Y1-A*	49
Y-53	50	3"	10 9/16"	Y50-A	Y21-1	Y21-2	Y25-3	Single	Y1-A*	73
YA-13	10	6"	11½"	YS-106A	Y-13	Y21-2	Y25-3	Multiple	—	29½
YA-14	10	10"	15½"	YS-107A	Y-13	Y21-2	Y25-3	Multiple	—	32

*Y1-B Tee also included.

HYDRAULIC PUMPS



Y-20 SERIES SINGLE-SPEED PUMP

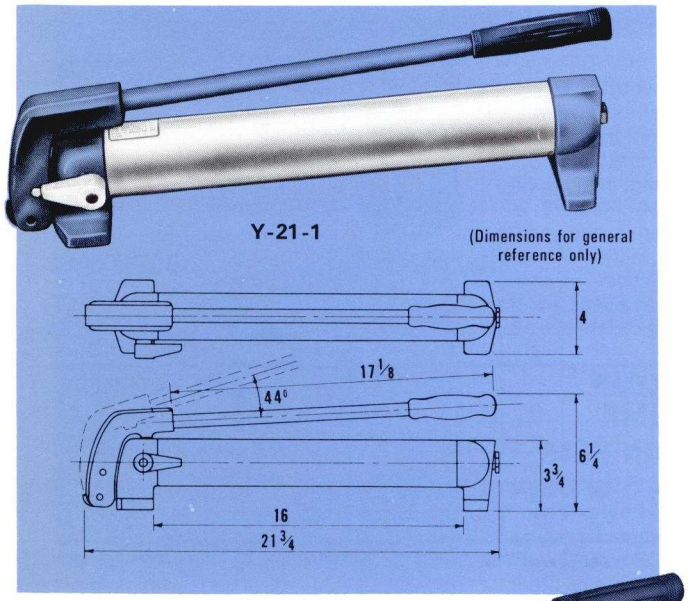
- **Features a built-in safety overload valve.**
- **Single-speed type pump delivers up to 10,000 p.s.i. pressure.**

Low-cost power source for single-acting rams. Lightweight pump is single-piston, single-speed type and develops up to 10,000 p.s.i. Operates horizontally or vertically with pump head in the "down" position. Finger-tip control valve provides instant release or pumping action. Use with OTC 4-ton and 10-ton "YS" series single-acting hydraulic rams. Maximum handle effort: 75 lbs.

No. Y-20—Hand pump only. Has 12.5 cu. in. reservoir. Wt., 8 lbs.

SPECIFICATIONS

Max. Pressure	Volume Per Stroke	Piston Dia.	Piston Stroke	Reservoir Capacity	Oil Port
10,000 p.s.i.	.069 cu. in.	⅜"	⅝"	12.5 cu. in.	⅜" NPT



Y-21 SERIES SINGLE-SPEED PUMP

- **Ideal for operating single-acting rams.**

Economical power source with proven reliability! Use to power gear and bearing pullers, shop forcing presses and in other hydraulic applications. A single-piston, single-speed type, this pump develops pressures up to 10,000 p.s.i. Operates horizontally or vertically with the pump head in the "down" position. Finger-tip control valve provides instant release or pumping action. Features built-in safety over-load valve. Ideal for use with OTC "Power-Twin" and "YS" series rams. Maximum handle effort: 122 lbs.

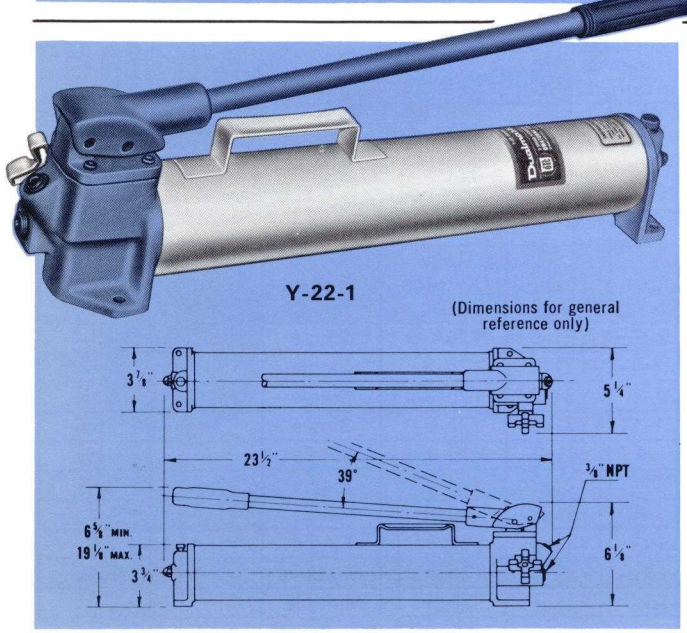
No. Y-21-1—Hand pump only. 1-quart (58 cu. in.) reservoir. Wt., 19 lbs.

No. Y-21—Y-21-1 hand pump with Y-21-2 6′ hose and Y-25-3 hose half coupler. Wt., 22 lbs.

No. Y-21-A—Y-21-1 hand pump with Y-21-2 6′ hose, Y-25-3 hose half coupler, Y-1-A pressure gauge and Y-1-B tee. Wt., 24 lbs.

SPECIFICATIONS

Max. Pressure	Volume Per Stroke	Piston Dia.	Piston Stroke	Reservoir Capacity	Oil Port
10,000 p.s.i.	.147 cu. in.	½"	¾"	58 cu. in.	⅜" NPT



Y-22 SERIES TWO-SPEED PUMP

Here's two-stage flexibility at a popular price. Pumps provide, in low-pressure stage, high oil volume for rapid ram piston approach and return. For high-force requirements, pump automatically switches to a high-pressure, low-volume stage. "Dualmaster Jr." has built-in 3-way control valve. The Y-22-1 features 1" and ½" dia. pistons and provides fast ram approach, in the low-pressure stage (up to 1,400 p.s.i.). The Y-22-3 features 2" and ½" dia. pistons. Offers four times faster ram approach and return (up to 200 p.s.i.) than the Y-22-1. Maximum handle effort is 90 lbs.

No. Y-22-1—Pump with 3-way valve for use with single-acting rams. Delivers .59 cu. in. of oil per stroke/low pressure stage. Wt., 23 lbs.

No. Y-22-3—Pump with 3-way valve for use with single-acting rams. Delivers 2.35 cu. in. of oil per stroke/low pressure stage. Wt., 23 lbs.

SPECIFICATIONS

Pump No.	Max. Pressure at 1st and 2nd Stages		Volume Per Stroke	Piston Dia.	Piston Stroke	Reservoir Capacity (Usable)	Oil Ports
Y22-1	1st stage	1400 p.s.i.	.59 cu. in.	1"	¾"	75 cu. in.	⅜" NPT
	2nd stage	10,000 p.s.i.	.147 cu. in.	½"			
Y22-3	1st stage	200 p.s.i.	2.35 cu. in.	2"			
	2nd stage	10,000 p.s.i.	.147 cu. in.	½"			

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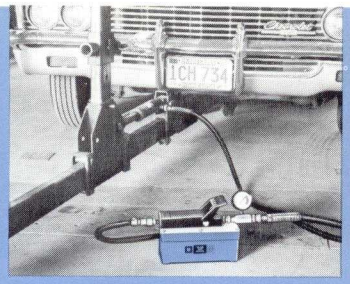
OWATONNA, MINNESOTA 55060, U.S.A.

HYDRAULIC PUMPS

air/hydraulic

Y-13 SERIES PUMP



U.S. Pat. Nos. 3,218,980, 3,597,121 and 3,788,781. Canadian Pats. Issued. Foreign Pats. Issued and Pending.

- **Ideal as a replacement for hand pump on body and frame straighteners!**

A perfect replacement pump for present hand pumps on body and frame-straightening equipment. Convert to this 10,000 p.s.i., air-driven unit, and get increased speed of operation. Ideal for all applications where an air supply of 40-120 p.s.i. is available. Internal relief valve protects hydraulic system components. Two-stage release mechanism allows for fast or metered ram return. An 80 cu. in. reservoir permits pump to be used with larger rams operating at up to 10,000 p.s.i. Air supply should have an in-line filter and lubricator as close to the pumping unit as possible.

No. Y-13—Air-driven hydraulic pump with hand/foot treadle actuator. Develops 10,000 p.s.i. at 100 p.s.i. air pressure. Has ⅜" NPT oil port, 80 cu. in. reservoir. Weight, 18 lbs.

Performance (at 100 p.s.i. air pressure)

Hydraulic Pressure	Oil Delivery
0 p.s.i.	35 cu.in./min.
5,000 p.s.i.	10 cu.in./min.
10,000 p.s.i.	4 cu.in./min.

air/hydraulic

Y-13-REM SERIES PUMP

U.S. Pat. Nos. 3,218,980, 3,597,121 and 3,788,781. Canadian Pats. Issued. Foreign Pats. Issued and Pending.

- **Perfect for body and frame-straightening from a distance.**

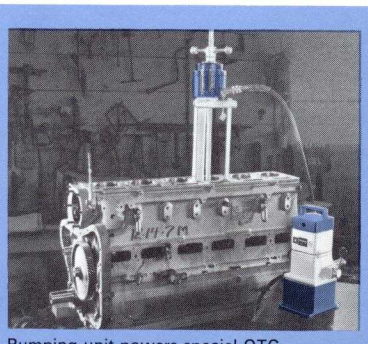
Remote control makes this pump ideal for many uses. 15-foot cord allows operator to stand away from the work to observe. Body and frame-straightening can now be done faster and easier. This 10,000 p.s.i., air-driven unit increases the speed of operation. Adapts to all portable power type equipment. Uses an air supply of 40-120 p.s.i. Internal relief valve protects hydraulic system components from damage. An 80 cu. in. reservoir permits pump to be used with larger rams operating at up to 10,000 p.s.i. Air supply should have an in-line filter and lubricator as close to the pumping unit as possible.

No. Y-13-REM—Air/Hydraulic pump with remote control actuator, 15-foot cord. Develops 10,000 p.s.i. at 100 p.s.i. air pressure. Has ⅜" NPT oil port, 80 cu. in. reservoir. Wt., 21 lbs.

Performance (at 100 p.s.i. air pressure)

Hydraulic Pressure	Oil Delivery
0 p.s.i.	35 cu. in./min.
5,000 p.s.i.	10 cu. in./min.
10,000 p.s.i.	4 cu. in./min.

Vanguard® Jr. 2-STAGE HI-PRESSURE POWER UNITS



Pumping unit powers special OTC puller which removes and installs engine cylinder sleeves.

- **Combines compact size and light weight with 2-stage high performance.**

Ideal for hundreds of hydraulic applications such as bending, pressing, forming, pulling and pushing. Motor driven, yet costs little more than a 2-speed hand pump! Two-stage flexibility automatically matches pump performance to job requirement. A roller-vane type pump provides the low-pressure, high-volume stage, assuring fast ram approach and return. At approximately 200 p.s.i., the high-pressure, low-volume stage—provided by an axial-piston pump—takes over to handle high-force requirements. Readily portable, thanks to light weight (25 lbs.) and compact size (16" high). Has safety relief valve, factory-set at 10,000 p.s.i. Thoroughly field-tested for high-cycle reliability. Has ⅜" NPT oil port.

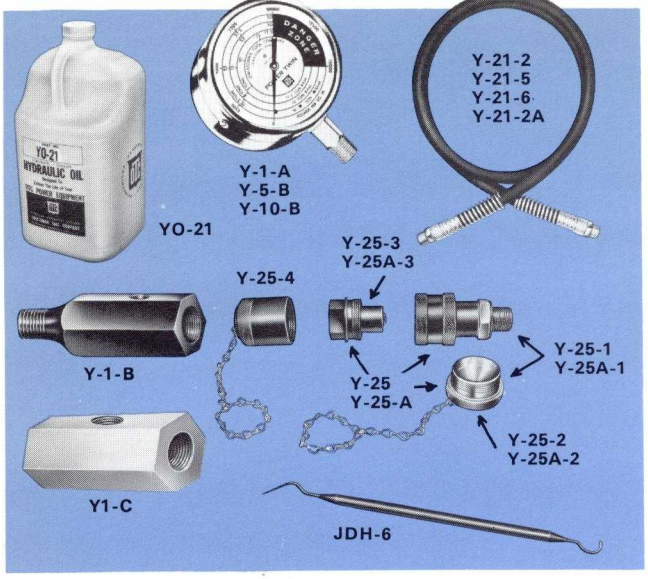
No. Y27AO-1-A-O-O—10,000 p.s.i. pump with: universal motor (½ h.p., 12,000 r.p.m., 115 volt, 60/50 cycle A.C. sgl. phase); built-in 3-way control valve (for single-acting rams); "Run-Off-Jog" motor control switch; .45 gal. (104 cu. in.) reservoir.

No. Y27AO-7-A-1-O—Same as above, except has remote control hand switch with 6' cord.

Performance

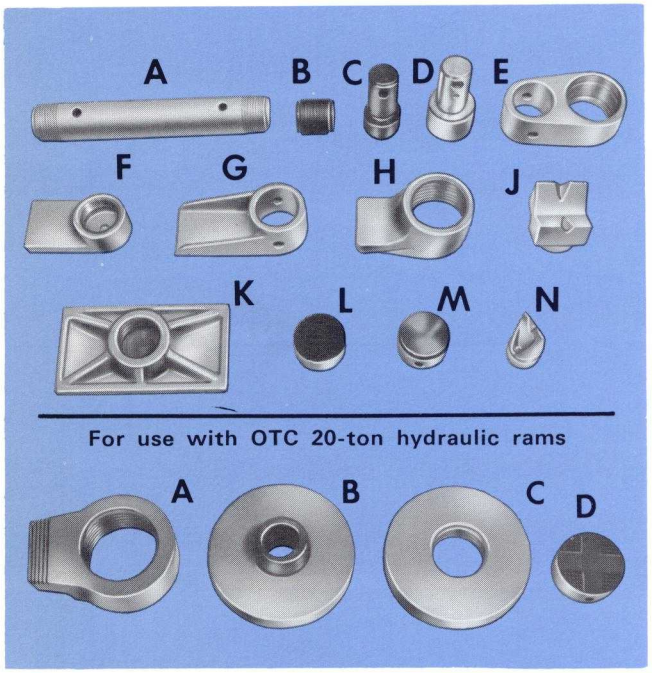
Hydraulic Pressure	Oil Delivery
200 p.s.i.	170 cu. in./min.
1,000 p.s.i.	32 cu. in./min.
5,000 p.s.i.	25 cu. in./min.
10,000 p.s.i.	18 cu. in./min.

HYDRAULIC AND RAM ACCESSORIES



HYDRAULIC ACCESSORIES

No. YO-21—HYDRAULIC OIL . . . One qt. Viscosity is 215 SUS @ 100°F.
No. Y-1-A—PRESSURE GAUGE . . . Calibrated 0-10,000 p.s.i. and 0-50 tons. ¼" NPT male fitting.
No. Y-5-B—PRESSURE GAUGE . . . Calibrated 0-10,000 p.s.i. only. ¼" NPT male fitting.
No. Y-10-B—PRESSURE GAUGE . . . As above, except has metric calibrations. ¼" NPT male fitting.
No. Y-21-2—6' HOSE . . . ⅜" NPT ends.
No. Y-21-5—6' HOSE . . . ¼" NPT ends.
No. Y-21-6—2' HOSE . . . ⅜" NPT ends.
No. Y-21-2A—8' HOSE . . . ⅜" NPT ends.
No. Y-1-B—TEE . . . For installing gauge between pump and hose coupling. Has ¼" and ⅜" NPT female and ⅜" NPT male ends.
No. Y-25—COMPLETE QUICK COUPLER . . . ⅜" NPT size.
No. Y-25-A—COMPLETE QUICK COUPLER . . . ¼" NPT size.
No. Y-25-1—RAM HALF COUPLER AND DUST CAP . . . ⅜" NPT size.
No. Y-25A-1—RAM HALF COUPLER AND DUST CAP . . . ¼" NPT size.
No. Y-25-2—DUST CAP . . . For Ram Half Coupler, ⅜" NPT size.
No. Y-25A-2—DUST CAP . . . For Ram Half Coupler, ¼" NPT size.
No. Y-25-3—HOSE HALF COUPLER . . . ⅜" NPT size.
No. Y-25A-3—HOSE HALF COUPLER . . . ¼" NPT size.
No. Y-25-4—DUST CAP . . . For Hose Half Coupler, ⅜" NPT size.
No. JDH-6—"O" RING SEAL HOOK . . . Removes and installs "O" ring seals and oil seals.
No. Y1-C—DOUBLE TEE ADAPTER . . . Permits use of more than one ram in series with one pump. Three ⅜" NPT ports.



"YS"-SERIES RAM ACCESSORIES

These versatile attachments let you "harness" OTC hydraulic force and put it to work exactly where it's needed, to handle an endless variety of maintenance tasks. Accessories thread onto the ram's piston rod end or collar, or into the ram base. Extension tubes provide additional "reach" to perform various jobs.

For use with OTC 4-ton hydraulic ram, No. YS-101A:

A. **V-403**. . . . Extension tube, 10"
B. **V-407**. . . . Threaded tube coupling
C. **V-408**. . . . Lock-on male adapter (2 incl.)
D. **V-409**. . . . Lock-on female adapter
E. **V-411**. . . . Tube clamp adapter
F. **V-417**. . . . Plunger toe
H. **V-419**. . . . Ram collar toe
J. **V-420**. . . . 90° "V" base
K. **V-421**. . . . Ram flat base
L. **V-423**. . . . Serrated saddle
N. **V-430**. . . . Wedge head

For use with OTC 10-ton hydraulic rams, Nos. YS-106A and YS-107A:

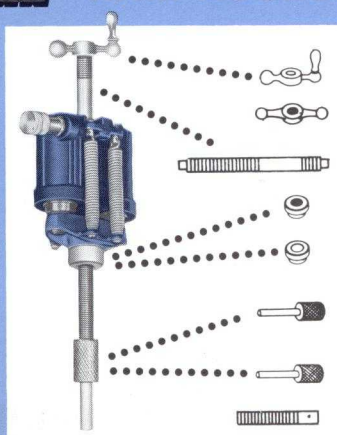
A. **V-1002**. . . . Extension tube, 10"
B. **V-1005**. . . . Threaded tube coupling
C. **V-1008**. . . . Lock-on male adapter
D. **V-1009**. . . . Lock-on female adapter
E. **V-1011**. . . . Tube clamp adapter
F. **V-1017**. . . . Plunger toe
G. **V-1018**. . . . Lock-on plunger toe
H. **V-1019**. . . . Ram collar toe
J. **V-1020**. . . . 90° "V" base
K. **V-1021**. . . . Ram flat base
L. **V-1023**. . . . Serrated saddle
M. **V-1024**. . . . Smooth saddle
N. **V-1030**. . . . Wedge head

For use with OTC 20-ton hydraulic rams, Nos. YS-112A and YS-113A:

A. **V-2019**. . . . Ram collar toe
B. **V-2021**. . . . Ram flat base
C. **V-2022**. . . . Plunger base
D. **V-2023**. . . . Serrated saddle

POWER-TWIN® RAM ACCESSORIES

These accessories permit you to utilize the versatility of your OTC "Power-Twin" ram to the fullest!



DESCRIPTION	17½-TON	30-TON	50-TON
SPEED CRANK	Y15-13	Y30-13	Y50-13
SPEED NUT	973-8 1"-8 thread	Y30-15 1¼"-7 thread	Y50-15 1⅝"-5½ thread
ADJUSTING SCREW	Y15-12 1"-8 thd., 20" long	Y30-12 1¼"-7 thd., 24" long	Y50-12 1⅝"-5½ thd., 30" long
THREADED INSERT	Y15-2C 1"-8 thread	Y30-2C 1¼"-7 thread	Y50-2C 1⅝"-5½ thread
PLAIN-HOLE INSERT	Y15-2D 1 1/16" diameter hole	Y30-2D 1 5/16" diameter hole	Y50-2D 1 1/16" diameter hole
PUSHING ADAPTER	938-14 1"-8 thread ½" dia. shank	939-14 1¼"-7 thread ¾" dia. shank	939½-14 1⅝"-5½ thd. 1" dia. shank
PUSHING ADAPTER	938-15 1"-8 thread ¾" dia. shank	939-15 1¼"-7 thread ¾" dia. shank	939½-15 1⅝"-5½ thd. 1¼" dia. shank
JACK SCREW	Y15-14 1"-8 thd., 7" long	Y30-14 1¼"-7 thd., 9" long	Y50-14 1⅝"-5½ thd., 11" long

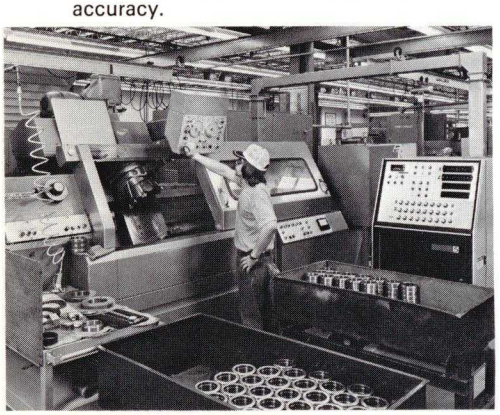
OWATONNA TOOL COMPANY
OWATONNA, MINNESOTA 55060, U.S.A.

OTC's modern plant . . . the home of quality!

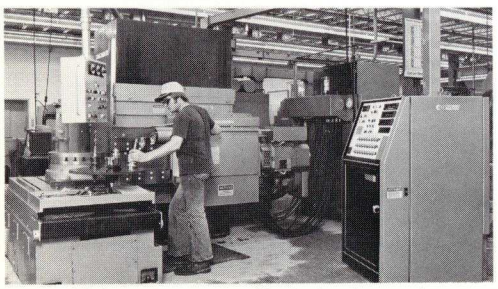
"Milwaukee-Matic" machining center is tape programmed to perform multiple operations with extreme accuracy.

. . . where traditional craftsmanship and space age production methods meet!

One of the most modern plants in the industry . . . OTC's complete, self-contained manufacturing facility! Recently expanded to keep pace with an ever-increasing product demand, the clean, well-lighted OTC factory features the latest in metal-working machinery . . . including amazing tape-programmed units which perform a multitude of precision operations with extreme accuracy. OTC's production departments are arranged for efficient material handling and product flow. Operations performed include forging, swedging, welding, flame-cutting, metal turning, milling, broaching, drilling, grinding, polishing, and sandblasting, as well as scientific heat-treating and final plating. In all departments, OTC's skilled, conscientious craftsmen take true pride in their work and maintain a firm determination that the OTC name shall forever symbolize high quality and unfailing reliability, as it has for over a half-century.



OTC makes wide use of its Cincinnati NC Universal Lathe—turning, drilling, boring, single-point threading.



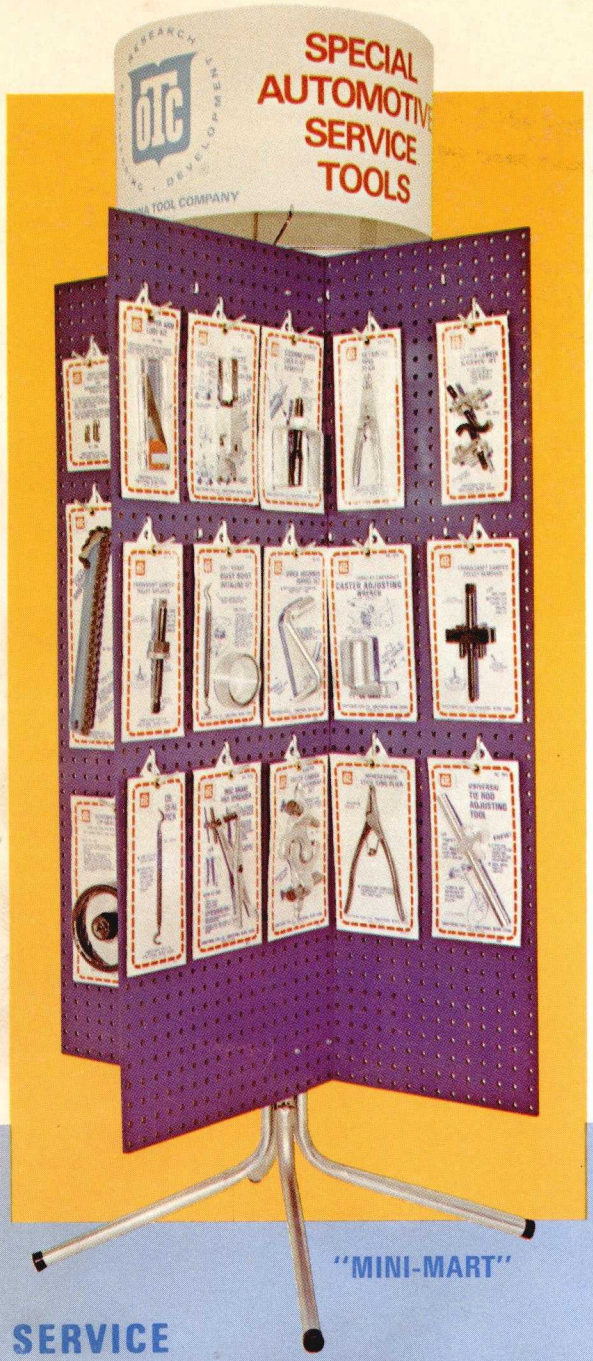
This tape-controlled, horizontal machining center speeds heavy drilling, milling and boring without sacrificing accuracy.

With all the technical machines and gauges being used today, the human mind still makes the final judgment.

For larger forgings, OTC's pneumatically-operated forging hammer delivers 3,000 lbs. of impact.

OWATONNA TOOL COMPANY

OWATONNA, MINNESOTA 55060, U.S.A.



"MINI-MART"

when visiting your local OTC jobber...

look for this OTC special tool display!

NEW TOOL IDEAS . . .

OTC's intensive program of field research and close cooperation with leading auto and truck manufacturers results in the continuous development of time-saving, special service tools. Check your jobber's "Mini-Mart" floor display regularly for the latest problem-solving tools from OTC. They'll reduce your job effort and increase your profit margin!

THERE'S A JOBBER NEAR YOU . . .

A nation-wide network of strategically located authorized warehouse distributors assures substantial inventories of our products in your area. Thousands of leading automotive jobbers from coast to coast carry the OTC line of automotive tools and service equipment. OTC strives to be as close as your telephone . . . to give you prompt, friendly service.

SERVICE

Service and replacement parts for OTC hydraulic and shop equipment items are available through a nation-wide network of Authorized Repair Stations. Parts for OTC pullers and special tools may be obtained from regular OTC jobber outlets. ***See OTC Parts Catalog No. PC-73 to determine component part numbers . . . consult OTC's Automotive Price List for prices of individual parts.***

OTC WARRANTY

All OTC tools and equipment are warranted against defects in materials and workmanship for 90 days from date of delivery to user. This warranty does not cover any tool or piece of equipment that has been abused, worn out, heated, ground or otherwise altered, used for a purpose other than that for which it was intended, or used in a manner inconsistent with any instructions regarding its use. The exclusive remedy for any item found to be defective under this warranty is limited to the repair or replacement of the defective tool or piece of equipment, and OTC shall not be liable for any consequential or incidental damages. Final determination of defects shall be made by OTC in accordance with procedures established by OTC. No agent, employee or representative of OTC has any authority to bind OTC to any affirmation, representation or warranty concerning OTC products, except as stated herein.

DISCLAIMER

THE ABOVE WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

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